Texas State Journal of Medicine

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DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION AND PUBLIC HEALTH IN TEXAS

The American Cancer Society, Texas Division, and the Post Graduate Medical Assembly of South Texas, meeting on consecutive days in Houston, will offer an excellent postgraduate series for the Texas physician. The thirteenth annual meeting of the Assembly, on December 1, 2, and 3, will be preceded on November 29 and 30 by the second annual meeting of the American Cancer Society, Texas Division. An innovation for the Assembly this year is a cancer symposium on December 2, which will be an added incentive for physicians interested in cancer to go to Houston for the two programs.

Out-of-state speakers for the Assembly include the following:

DR. ALBERT H. ALDRIDGE, Professor of Obstetrics and Gynecology, Columbia University, New York.

DR. GRANVILLE A. BENNETT, Professor of Pathology, University of Illinois College of Medicine, Chicago.

DR. CHARLES F. BRANCH, Assistant Director, American College of Surgeons, Chicago.

DR. ALEXANDER BRUNSCHWIG, Surgeon, Memorial Hospital, New York.

DR. MANDRED W. COMFORT, Professor of Medicine, Mayo Foundation, Rochester, Minn.

DR. MANUEL M. GARCIA, Director of Department of Therapeutic Radiology, Charity Hospital of Louisiana, New Orleans.

DR. JACK S. GUYTON, Associate Professor of Ophthalmology, Johns Hopkins University School of Medicine, Baltimore.

DR. EDWARD STARR JUDD, JR., Surgical Staff, Mayo Clinic, Rochester, Minn.

DR. CHARLES M. MCLANE, Assistant Clinical Professor of Obstetrics and Gynecology, Cornell Medical College, New York.

DR. J. H. MAXWELL, Professor of Otolaryngology, University of Michigan Medical School, Ann Arbor.

DR. L. H. MOUSEL, Clinical Professor of Anesthesiology, George Washington University School of Medicine, Washington.

DR. R. C. PAGE, General Medical Director, Standard Oil Company (New Jersey), New York.

DR. GEORGE E. SHAMBAUGH, JR., Assistant Professor of Otolaryngology, Northwestern University Medical School, Chicago.

DR. CLIFFORD SWEET, Chief of Medical Service, Children's Hospital of the East Bay, Oakland, Calif.

DR. PHILLIPS THYGESON, Associate Clinical Professor of Ophthalmology, University of California Medical School, San Jose, Calif.

DR. EDWARD WEISS, Professor of Clinical Medicine, Temple University Medical School, Philadelphia.

The continuous general assembly, the separate program on eye, ear, nose, and throat, scientific exhibits and motion pictures, technical exhibits, and dinners for the Medical Assembly will all be housed in the Coliseum and Music Hall, adjacent to which is ample parking space. This arrangement should be advantageous to participants, for whom lounge rooms and refreshments will also be made available within the Coliseum-Music Hall structure.

A registration fee of $15 entitles the visiting physician to all of the features of the Assembly program, including an entertainment to be given by Harris County Medical Society on Monday night, December 1, for physicians and their wives, and another on Tuesday night, December 2, to be given by the Eye, Ear, Nose, and Throat Section of the Assembly. Advance registration is being taken at 229 Medical Arts Building, Houston 2, executive office of the Assembly, and

prompt application for hotel accommodations are suggested by those in charge.

The Texas Division of the American Cancer Society, meeting at the Rice Hotel on November 29 and 30, will have sessions for physicians, nurses, and laymen interested in cancer control. Dr. Charles S. Cameron, Acting Medical Director, New York; Mr. Douglas Poteat, Executive Vice-President, New York; Mrs. H. B. Ritchie, Field Army Commander of Region 3, Athens, Ga.; and Mrs. Harold V. Milligan, Field Army Commander, New York, will represent the national organization of the American Cancer Society. Representative Texas professional personnel and laymen will participate, as will several outstanding medical authorities from out of the state who will be in Houston for the program of the Post Graduate Medical Assembly. There will be no registration fee for the cancer meeting.

A general introductory meeting Saturday morning, November 29, will be followed in the afternoon by a symposium on the present status of cancer control and a series of group meetings for physicians, nurses, campaign directors, and the Women's Field Army, respectively, which will be held simultaneously. Sunday morning, November 30, professional visitors will take part in a demonstration tumor clinic teaching conference presented by representatives from a number of the Texas tumor clinics which are cooperating with the American Cancer Society and special out-of-state authorities. Laymen will meet for a round-table discussion of educational materials and activities suitable in presenting the cancer control program. The Executive Committee, Board of Directors, and members and delegates will meet that afternoon at the M. D. Anderson Hospital for Cancer Research.

The double-bill program of the Texas Division of the American Cancer Society and of the Post Graduate Medical Assembly of South Texas will provide five days of top-rank scientific fare for Texas physicians. For those who cannot be present for the entire five days, either program has much to offer.

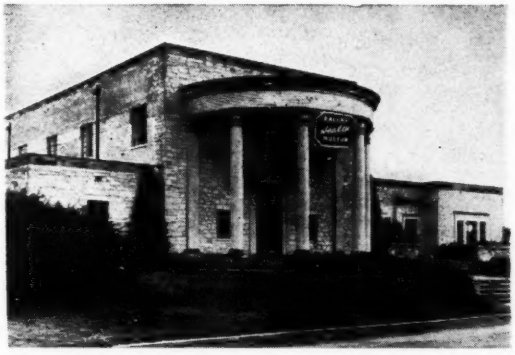
A Supplemental Session of the American Medical Association will be held in Cleveland, Ohio, January 5-8, 1948. It will be remembered that the House of Delegates of the American Medical Association held an interim meeting last year in December. The House of Delegates at Atlantic City, last June, decided that the next interim session should include a scientific program, with scientific and technical exhibits, much as in the case of the annual session of the Association. The Council on Scientific Assembly has prepared a scientific program covering many of the topics now prominently before the medical profession of the country, such as peptic ulcers, blood dyscrasias, and the chronic invalid, with panel discussions of the post-hospital care of cancer patients. There will be discussions of the treatment of the fat and lean, cancer of the prostate, and use of BCG vaccine in the prevention of tuberculosis. There will be a symposium on multiple injuries in automobile accidents, and a panel discussion on the treatment of pathologic conditions in adolescence. There will be a panel discussion on the treatment of diabetes, jaundice, the Rh factor, and an interpretation of roentgen-ray films of the chest. The first two days of the supplemental session will be given over to meetings of the House of Delegates, and to a program conducted by the Council on Industrial Health. The scientific exhibits will include a demonstration of the operaton of a diagnostic cancer clinic.

An interesting feature of the interim session will be the presentation for the first time of a gold medal to a general practitioner who has rendered exceptional service to his community. This event represents a definite advance in the campaign under way looking to the proper recognition of the general practitioner and emphasis of the value of his service as a family physician. A Section on General Practice has been set up in the Scientific Assembly of the American Medical Association, and such a section has recently been authorized by the State Medical Association of Texas, and will present its first program at the Houston annual session next April. In addition, the general practitioners have organized an American Academy of General Practice. It would appear that the general practitioner is about to come into his own, and the family physician about to return to home and family.

Any of our readers who expect to attend the Cleveland interim session should without delay take steps to secure hotel reservations. A list of hotels will be found on ad page 84 of the October 18 number of *The Journal of the American Medical Association.* An application blank for hotel accommodations will also be found there. Dr. David Chambers, Chairman of the Hotel Committee, 511 Terminal Tower, Cleveland 13, is the person to whom application for hotel accommodations should be made, regardless of the hotel desired. Five hotels should be named in the order of preference.

The Dallas Health Museum, located in Fair Park, Dallas, which celebrated its first anniversary on October 16, has announced it will make an annual award for the outstanding

contribution of the year to public health in Texas. The first award will be made during the 1948 annual session of the State Medical Association of Texas in Houston on the evening of April 28 at a public meeting to be held in the City Auditorium. This award is to be made on the basis of the value of the contribution made by an individual or group of individuals toward improving the health of the community. Only those residing in Texas at the time the contribution was made will be eligible. A committee, headed by Dr. J. W. Bass, director of the Dallas Health Department, and consisting of representatives of the State Medical Association, State Dental Association, Texas Public Health Associa-



The Dallas Health Museum, Fair Park, Dallas.

tion, State Health Department, and nursing and public health engineering groups, met in Dallas September 22 to determine criteria for making the award. The board of judges will be selected later by the Health Museum, which will consider the recommendations submitted by any health agency or organization, or other civic group.

The Dallas Health Museum in the first seven months of its existence, in addition to providing exhibits and displays used to tell a continuous story of health in many of its aspects, provides housing for weekly child health conferences conducted by the Dallas Health Department, chest x-ray surveys conducted by the Tuberculosis Association, motion pictures and lectures at intervals, and sponsors the Golden Age Hobby Club for persons 60 years of age or older.

In the first seven months of its existence some 58,571 persons passed through the halls of this museum, which is the second of its kind in the United States. It was an important feature at the State Fair of Texas, October 4-19, 1947. Many special exhibits were displayed by the museum during the fair. Some of the most interesting of these exhibits were the atomic energy exhibits, one loaned by the Monsanto Chemical Company of Oak Ridge, Tenn., which described industry's part in safeguarding the health of the atomic worker; the other, a graphic representation by the U. S. Navy of the Bikini bombing experimnets. Specimens demonstrating the radiological effects of the atom bomb and some of the animals actually present in the Bikini area at the time of the tests were on exhibit.

The Dallas Health Museum is a permanent institution and it is the desire of the museum management and board that it be used by all the people of Texas. Plans are being made to have groups of students from many outlying districts visit the museum by bus. The medical profession of Texas should take advantage of every opportunity to utilize this important adjunct to health education.

The Fort Worth-Tarrant County Mental Health Clinic, the first in the state to be implemented through funds from the National Mental Health Act, was opened November 10 on a full time basis under the auspices of the Department of Public Health and Welfare of the city of Fort Worth. This clinic has been operated since 1943 on a part-time basis with voluntary workers consisting of psychiatrists from the U. S. Public Health Service Hospital and psychiatric social workers, clinical psychologists, and clerical assistants from various health and welfare agencies of the city.

With the passage of the Mental Health Act in 1946, federal funds were made available to the various states through the U. S. Public Health Service. The sum of $3,000,000 was appropriated for grants-in-aid to states for local mental health programs. The Mental Health Act also provided funds to increase research in problems of mental health as well as training of urgently needed personnel.

The Texas State Health Department has adopted a statewide program of aiding local communities through their local health units to set up mental hygiene clinics for the medically indigent. These grants to communities through the regular budgets of the health units are expected to be withdrawn on the basis of approximately 25 per cent per year, according to Dr. George W. Cox, State Health Officer, so that in a period of about four years the community will assume the full expense of operating the clinic. Through the State Health Department plan funds are also provided for the training of the personnel of these clinics.

The clinic in Fort Worth emphasizes child guidance and preventive educational therapy,

but will serve persons of all ages within the community who meet the eligibility standards. No person will be admitted who is able to obtain services from private psychiatrists and no patient under the care of a local physician for either medical or psychiatric reasons will be accepted without specific request of the attending physician.

The need for emphasis on psychosomatic medicine, guidance in behavior problems, particularly in children, and other psychiatric problems is recognized. It represents a deficiency in our over-all health program which deserves much more attention from the medical profession than it has received in the past.

Introducing Mr. Joe A. Clark, the new executive secretary of the Public Relations Committee of the State Medical Association. Mr. Clark, son of R. Lee and Leoti Sypert Clark, was born February 8, 1910, in Iowa Park, Texas. He was reared in Texas and attended public schools until he entered college at John Tarleton Agricultural and Mechanical College, Stephenville. His undergraduate work was completed at Texas Christian University in 1934. Upon receipt of his bachelor's degree, Mr. Clark entered the teaching profession, and for four years was principal and head teacher in Texas school systems.

Mr. Clark then helped organize a municipal recreation department and served as recreation superintendent for the cities of Mineral Wells and Cisco. In 1940 he was elected secretary-manager of the Chamber of Commerce in Cisco and served in this capacity until shortly before World War II, when he moved to Fort Worth, where he was employed by the Department of Public Health and Welfare. Later he was assigned by the same department to set up the Division of Health Education, serving as health education consultant until the time of his employmen by the War Assets Administration, in October, 1946. Mr. Clark served as chief of the Group Benefits Branch of the Public Interest Division and assisted with the distribution of surplus materials to hospitals and educational and welfare institutions before his appointment as regional training officer for the Fort Worth Office of the War Assets Administration. With this same agency he was assigned field work over a great part of the state and maintained close contact with all types of educational and health institutions of cities, counties, and their political subdivisions, in the interest of a more rapid disposal of war surplus materials for medical, educational, and welfare purposes.

As a member of a family which includes a long list of prominent educators and doctors, Mr. Clark developed a keen interest in the related branches of medical and public health actvities at an early age. Employed part time through his years of attendance in high school and colleges, he had an opportunity to become familiar with the techniques required for preparation of radio continuity and program broadcasts, newspaper writing and photography, the coordination of agency and intra-agency activities, and the latest methods developed in the field of audio-visual aids for educational purposes.

MR. JOE A. CLARK

His work and that of his father before him have resulted in a wide acquaintance in all parts of Texas and have given him a good background for a thorough understanding of its people.

Married for twelve years, to Laurel Persons of Hico, Mr. Clark has four children. He will continue to maintain his residence in Fort Worth.

Mr. Clark directs many of the activities heretofore directed by Mr. Jeff Reese, recently retired from the service of the Association.

The "American Medical Directory," last published in 1942, is about to be brought up to date in a new, eighteenth edition, according to the American Medical Association, publishers of the Directory. Information cards for purposes of revision have just been mailed to every physician in the United States, its dependencies, and Canada, and the promptness and care with which these cards are filled out and returned will determine in large measure the completeness and accuracy of the new volume.

Everyone who has searched for material on physicians, hospitals, medical organizations and activities is familar with the important contribution which the American Medical Association makes through its Directory. It provides full information on medical schools, specialization in the fields of medical practice, memberships in special medical societies, tabulation of medical journals and libraries, and almost every other fact concerning the medical profession about which a person might be interested.

Physicians who receive the information cards should fill them out, regardless of whether or not any changes have occurred in the points about which data are requested or whether or not similar information has recently been furnished. The right half of the card should also be filled out for statistical purposes. A physician incurs no obligation by filling out the card or by having his name published in the Directory. Those who fail to receive a card by December 1 are urged to notify the Directory Department of the American Medical Association, 535 North Dearborn Street, Chicago 10, so that a duplicate card can be mailed.

It is a small thing to fill out a card and drop it in the mail box, but each physician who returns his information card for the Directory is performing a service of no mean dimensions for the countless persons who have learned to depend on the "American Medical Directory" when they need authentic information about the medical profession and medical activities. Texas physicians will certanly take time to do their part in making the new Directory better than ever before.

Food Conservation now is of primary importance to each American, physicians included.

It is not a matter of opinion that the people of Europe face a winter of near starvation—frost, drought, and floods throughout the growing season took a heavy toll of food crops in Europe, which at best would have been inadequate. To Americans who think, it is hardly a matter of opinion that we must share what we have with Europe—humanitarianism alone would urge that we help to ease the hunger pangs of the European nations, and self-interest likewise demands that we aid Europe to keep on her feet. Secretary of State Marshall has said:

> "During this critical period in world affairs, food is a vital factor in our foreign policy. And the attitude of Americans toward food can make or break our efforts to achieve peace and security throughout the world.
>
> "From this time on, at least until the end of winter, every man, woman, and child in this country will exert a direct personal influence on the course of international affairs.
>
> "The connection between the individual American and world affairs is unmistakably clear—our foreign policy has entered the American home and taken a seat at the family table."

Perhaps it is a matter of opinion as to how we should conserve food, though it is obvious that waste must be curtailed. However, if the Citizens Food Committee or other governmental advisors recommend measures such as meatless Tuesdays and poultryless and eggless Thursdays, we would do well to cooperate, for those who make such recommendations do so only after careful study of existing conditions and the evaluation of various proposals.

A general program of moderation in eating, an earnest effort to waste no food, and cooperation with government programs to conserve food will bring no real hardship to us. Instead, it will lead to healthier, happier people in Europe, and perhaps, if we work at it hard enough all along the line, to peace—certainly peace cannot be wrought where starvation lurks.

For those who wish to have a more specific part in bringing relief to sufferers in Europe, the "Cooperative for American Remittances to Europe, Inc.," offers a simple opportunity. This nonprofit, government-approved service, in which twenty-seven major overseas relief agencies cooperate, has stockpiles of food and clothing in fifteen European countries. By sending $10 to "CARE, 50 Broad Street, New York," anyone can assure delivery of one of fourteen standard packages (for example, 22 pounds of nutritious foods), duty and ration free, to a needy person in Europe.

In order to distribute food now before official red tape makes government action possible, CARE asks that each person who knows of the agency pay for a CARE package and persuade ten friends to do the same. Instead of exchanging Christmas presents as usual this year, CARE suggests help to Europe, and offers a special service to make possible this help without omitting a holiday greeting. Upon receipt of a $10 order, CARE

will mail to any designated person at Christmas a donor certificate showing that a CARE food package has been sent to a needy European family in his name.

Physicians through the ages have been known for their compassion and have been respected for their insight into human relations. They can be expected to take a personal interest during these hazardous months in conserving food, in sending direct relief through CARE and other authorized channels, and in promoting cooperation among Americans toward programs of assistance to Europe which, while altruistic in some degree, are essential if the soil for peace is to be tilled.

Pay Dues Early.—The State Secretary is anxious that State Medical Association dues for 1948 be paid as early as possible, and by as many members as possible. The plea to pay dues early is made each year as a matter of course and as a worth-while expedient. Obviously, the earlier membership dues reach the State Secretary, the better will his force be able to handle the peak load, which always comes in the last few weeks before the time limit, which, according to the By-Laws of the Association, is April 1. It is not entirely feasible to employ sufficient clerks to handle the situation properly at its peak for the reason that there would not be enough work to keep them busy at other times, and it is not feasible to employ a special clerical force for such a special occasion.

An added reason for the requested prompt payment of dues this time is the fact that the 1948 annual session of the Association will be held three or four weeks earlier than is usually the case. The time between April 1 and the dates of the meeting, April 26, 27, 28, and 29, is entirely too short for doing the many things that must be done in the home stretch.

An important factor which always intervenes in the situation is the election of county medical society officers, due to be held in December. New secretaries must take over at a very busy time, and some of them need careful briefing before they can know how to proceed with the business of collecting dues, making reports, and in general checking the records. However, there is no reason why a county society secretary for 1947 should not collect membership dues for 1948, including, of course, both State Association and county society dues. The State Secretary is prepared to furnish membership cards for 1948 as fast as dues are received in the Central Office. There is no reason for holding the State Association dues in the treasuries of county societies, and every reason why the money should be paid to the State Secretary as soon as received.

State Association regular dues are $20. There are no provisions in the By-Laws for a reduction in this amount in accordance with the time of year dues are paid. The county society portion of annual dues is fixed by the individual society, and each society can do what it chooses in this respect. Members emeritus pay no dues, but they are carried on the rolls exactly as are other members. Honorary membership dues are $4. Honorary members are nominated by county medical societies, but elected by the House of Delegates of the State Association at the annual session. Intern membership dues are $4. Only doctors of medicine licensed to practice medicine in Texas, and who are continuing their medical education and are not in private practice may become intern members, and intern membership ceases to exist as soon as any such member enters the private practice of medicine.

Military membership is no longer available. It is available only during the period of war, and we are no longer at war. However, it is assumed that those military members who are still in the service on a temporary and obligatory basis, may continue to pay military membership dues of $1. In this connection, it should be remembered that honorary and intern memberships carry subscription to the JOURNAL, and medical defense, as does membership emeritus; military membership does not provide subscription to the JOURNAL, but it does furnish medical defense.

In case of doubt concerning any of these matters, write the State Secretary.

Our Relocation Service should be called to the attention of our readers. The subject has been dealt with before, but usually in connection with some other subject. During the war period, the service of Procurement and Assignment of Physicians for Texas was conducted through the office of the State Secretary, who, as a matter of fact, had been appointed chairman of the committee concerned by the federal government. It was the function of this committee, through its chairman and vice-chairman, to determine the availability of physicians in the state for service with the armed forces, industry engaged in war service, and public health service. At the conclusion of the war, the government allowed the records set up in connection with this service to remain in the office of the State Medical Association.

These records and related data have been useful in the relocation of doctors following their war service. They are equally as use-

ful in locating and relocating doctors regardless of war service. Any community needing a doctor, or any doctor seeking a location may find what is wanted through this service. A letter to the State Secretary will get results. No charge is made for this service.

An important supplement to this service is the "For Sale or Exchange" section of the ad pages of the JOURNAL, through which contacts may be made. These little ads are charged for at the rate of $1.50 per insertion of fifty words or less, which is about what it costs to publish them.

National and Regional Societies Are Now Listed in the JOURNAL under the heading "Coming Meetings and Clinics." For some years the JOURNAL has included under the same heading information about Texas organizations for the benefit of readers who are directly interested in the organizations or who wish to avoid conflict in scheduling other events. The enlarged list is the result of a reported need for similar information about national societies.

Our readers are invited to check the items appearing in "Coming Meetings and Clinics" whenever they wish to know the place or date of the next meeting of a society or the name and address of its president or secretary. An attempt will be made to publish up-to-date information regarding district, state, regional, and national societies and clinics which are of primary concern to Texas physicians. Suggestions for revising the list of organizations from time to time will be appreciated.

The editors must depend upon the secretary of each society to supply data for the listing in the JOURNAL, and they will be grateful for prompt and accurate reports of changes in officers and places and dates of meeting.

Comments as to the value of the "Coming Meetings and Clinics" department will be welcome. If the listings are not helpful to our readers, the space might well be devoted to material of greater significance.

CURRENT EDITORIAL COMMENT*

Tuberculosis—a Medical Problem.—In the last few years since the Army set the example, mass roentgen-ray surveys continue to reveal more and more tuberculosis. It is estimated that there are at present more than 4,000 persons in Texas who are in urgent need of treatment for tuberculosis. We can expect continued studies to increase this number daily. Almost 3,000 died in our state last year from tuberculosis; yet there are only about one-third the sanatorium beds needed to care for our patients. The death rate from tuberculosis in Texas is about twice as high as it is in some states where there are plenty of sanatorium beds.

One of the problems the physician with a tuberculous patient faces is whether to conduct his treatment at home or send him to a sanatorium. It probably would be an ideal situation if all tuberculous patients could start their treatment in a sanatorium, but with the shortage of beds, this solution is impossible. Most of the patients will have to be cared for at home. The general practitioner, therefore, should have a clear understanding of the principles of treatment of tuberculosis. It is vital for him to isolate the open case, and to select those patients he thinks might be benefited by surgery and send them to a sanatorium where they can receive this type of treatment.

Treatment is only one phase of tuberculosis control. Every physician who cares for tuberculous people should know where his patients can get all forms of care, if he is not equipped to give it. Case-finding, treatment, rehabilitation, and education are all important links in the control chain. There are agencies, either voluntary or professional in many parts of the state that can advise and help with all these phases of tuberculosis control. The state and local health departments, with the state sanatoriums, the local and state tuberculosis societies, the Vocational Rehabilitation Division of the Board of Education, and the Veterans Administration are all equipped to give counsel on this problem.

There is a vast amount of experimental work now being conducted to simplify and make more effective the treatment of tuberculosis. But as yet the most important single treatment is rest—emotional and physical. Good nourishment is another essential. Fresh air is the easiest of all to obtain in our climate. In addition to these age-old principles of treatment, various medicines are used to combat symptoms as they arise. The use of chemotherapeutic and antibiotic agents shows some promise of resulting in much better treatment. The miracle drug for the specific cure of tuberculosis has not yet been perfected. Until then, we must use all reasonable means of treatment to control this disease, that is a leader of death in the age group of 15 to 35 years.

ELLIOTT MENDENHALL, M. D.
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*This department of the JOURNAL presents editorial comments on current items pertaining to the science, art and practice of medicine, contributed by members of the State Medical Association and scientists closely associated with the medical profession of Texas. Invitation is hereby extended to any member of the State Medical Association of Texas to submit such discussions for this department. The discussions should not be more than 500 words in length.

ORIGINAL ARTICLES

CONTROL OF TUBERCULOSIS AMONG COLLEGE STUDENTS IN TEXAS

With a Report of Photofluorographic Survey of the Student Body of the University of Texas

J. EDWARD JOHNSON, M. D.
AUSTIN, TEXAS

Although tuberculosis kills more young people between the ages of 15 and 30 than any other disease,[1,2] and Texas has a college enrollment each year of more than 100,000 students between these ages, there is still no effective control program to protect them from this danger.

How many Texas students have tuberculosis on admission to college; how many die prematurely of the disease annually; or how many contacts are infected by them is entirely unknown, because adequate surveys have not yet been made. It was to learn the size and importance of the problem in Texas student health that the Texas Tuberculosis Association offered to sponsor and underwrite a recent survey at the University of Texas.

In 1931 when the Tuberculosis Committee of the American Student Health Association was set up, only 6 colleges in the United States were known to have control programs.[4] However, as the Committee began collecting information and making annual reports there was a gradual increase until in 1946 a total of 362 schools had joined the movement.[6] The Committee sent questionnaires to 32 Texas schools last year and received 6 replies that indicated a total of 3 efforts at control in this state. When it is recalled that Texas has 126 schools above high school level, it must be admitted that the report indicates small interest in a very important subject.

This latest report covers a combined total of more than 600,000 students from widely scattered sections of the United States, and thus can be considered as representing average conditions prevailing during that year. From the 362 schools with survey programs an average of 82 cases of tuberculosis were reported per 100,000 students. In the same year 145 colleges with no tuberculosis programs reported an average of only 6 cases per 100,000 students. Thus, the school with a survey program found 13 cases for each 1 located by the school without a survey. For the year 1942-1943 this score was 18 to 1, and in every annual summary the figures impressively emphasize the fact that if a hunt is made for the disease, it is found; if a hunt is not made, most of it is missed. We in Texas may multiply the known cases among college students by twelve or even fifteen if we care to estimate the size of the problem.

Setting up control programs in more than 125 Texas colleges will be a huge undertaking, but removing this festering focus of disease from this youthful and most susceptible segment of the population will be one of the most important achievements of our period.

Fortunately, many favorable factors that have never been present before will aid the movement. These are (1) the new photofluorographic equipment and technique ready for service with numerous units already delivered to strategic points; (2) the high state of efficiency and ready availability of the Tuberculosis Division of the State Department of Health, whose expanding facilities are equal to almost any reasonable demand for technical or material assistance; (3) the presence of efficient local units of the Texas Tuberculosis Association which are usually adequately staffed and equipped, and manned in most college towns by well trained personnel eager to be of assistance in tuberculosis control work; and (4) the return of doctors from the Armed Services making good medical service available for college control effort.

Through one or more of these organizations any college in the state can begin and maintain survey work until its own facilities can be provided.

REQUIREMENTS OF A COLLEGE CONTROL PROGRAM

A survey of college control programs in operation reveals many different types, and no single form has yet crystallized as the ideal. However, the Student Health Association Committee reported 93 colleges operating what it considers to be ideal programs, so that patterns are available.[6] Emphasis should not be placed too much on an *ideal* program but on the *best* program each college can set up. All existing units started small. If they are now larger and more efficient, it is because they started with what they had or could get and struggled with their obstacles until funds and facilities increased and improvement could be made.

The general objective of a college control program should be to locate, isolate, and exclude active cases of tuberculosis. This may be accomplished by the following procedures: (1) determination of the status of each student as to tuberculosis upon admission; (2) an annual tuberculosis survey of the resident student body; and (3) medical super-

From the Student Health Service, University of Texas.
Read before the Section on Public Health, State Medical Association of Texas, Annual Session, Dallas, May 7, 1947.

visory control of all rehabilitated tuberculosis patients.

Schools with limited facilities should require (1) admission certification of a recent negative intradermal skin test or a positive skin test with a recent negative chest roentgenogram; (2) an annual photofluorographic survey of the student body arranged through the State Health Department or the Tuberculosis Association; and (3) chest roentgenograms at six month intervals of students, faculty, and staff members with known but inactive cases of tuberculosis.

Schools with average health service facilities might consider (1) intradermal skin tests of students prior to admission with chest roentgenograms of all positive reactors and annual repetition of skin tests on negative reactors; (2) an optional photofluorographic survey of the entire student body; (3) chest roentgenograms at six month intervals in known but inactive cases;

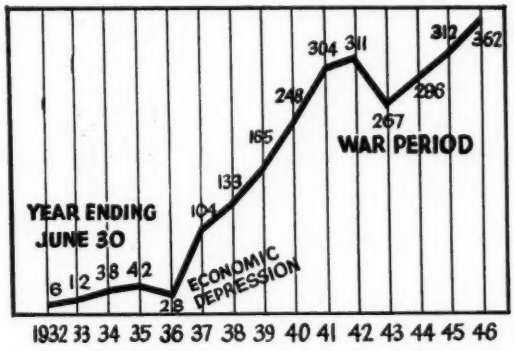

FIG. 1. Graph showing the number of colleges in the United States with tuberculosis control programs, 1932-1946.

and (4) an extension of the program to faculty, employees, and staff.

TUBERCULIN SKIN TEST

There is great confusion in the minds of many people regarding the value and place of the tuberculin skin test in control work. Several points and questions seem especially to stand out: (1) Is it worth the effort? (2) Is the rate not so high as to make the test unnecessary? (3) If used, should the test be by patch, scratch, or injection? (4) Is it not simpler, less expensive, and just as efficient to survey annually with microfilm?

The Student Health Committee has emphasized repeatedly and persistently in its annual reports the value of the intradermal skin test in college control work. It advises that, in the interest of economy, it is safe to limit roentgenograms to positive reactors. The test also lends itself well to the educational phase of the college health program.

There used to be objections from workers in the larger centers of the East that the majority of adults would show positive reactions. However, more recently this has ceased to be a valid objection because the

TABLE 1.—*Positive Reactions to Tuberculin Skin Tests Among College Students in the United States.*

Year	No. Colleges	% of Positive Reactors
1936-1937	91	27.3
1940-1941	255	20.7
1945-1946	184	17.6

percentage of positive reactions is definitely falling and in Texas has never been very high among college students, as indicated by high school senior rates. The fall in rate, 10 per cent in ten years, is shown by reports from schools widely scattered over the United States (table 1).[4, 6]

Myers[5] reported a fall in Minnesota from 35 per cent in 1928 to an all time low of 10 per cent in 1945. Since his state has led the nation in tuberculosis control efficiency during this period and has shown a corresponding fall in the mortality rate also, the decline in positive reactions to the skin test may be

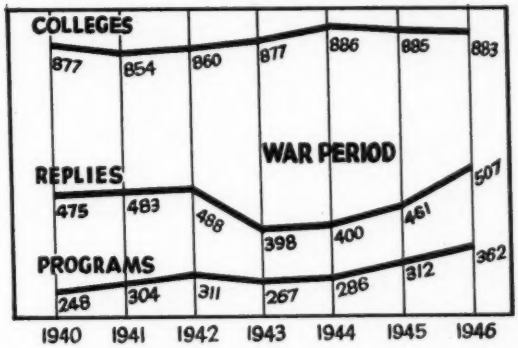

FIG. 2. Graph showing the number of colleges in the United States surveyed by the Tuberculosis Committee of the American Student Health Association, 1940-1946; the number of colleges replying to the questionnaires; and the number reporting tuberculosis control programs.

accepted as an indication of the gradual eradication of tuberculosis.

The Committee insists that the intradermal injection of an adequate dose of either a good quality of old tuberculin or a purified derivative is the only dependable method to be recommended. It further advises that two doses should be used before negative classification is given.

TUBERCULIN TEST VS. PHOTOFLUOROGRAPHY

The magic photofluorograph on microfilm has seized the imagination of the public and has already been overplayed as an agent of diagnosis for the control of tuberculosis. It can no more replace other tools

than the fever thermometer can substitute for the stethoscope. Photofluorography is a case finding agency. It is no more the answer to the control problem than diphtheria antitoxin was the end of membranous croup. It stands in exactly the same relation, serving after the disease breaks out in active form. What is needed in tuberculosis is the same effective prevention that has solved the other dangerous epidemics. The photofluorographic picture, the stethoscope, the thermometer, and the microscope all serve in case finding. What is needed is something that will track down infection and tag it even before it produces a case, in other words, the "pre-roentgen ray" stage. Only the tuberculin reaction can do this. Only by supervision of positive reactors can the disease be found early enough to avoid new contact infections which replace the active cases relegated to the sanatorium.

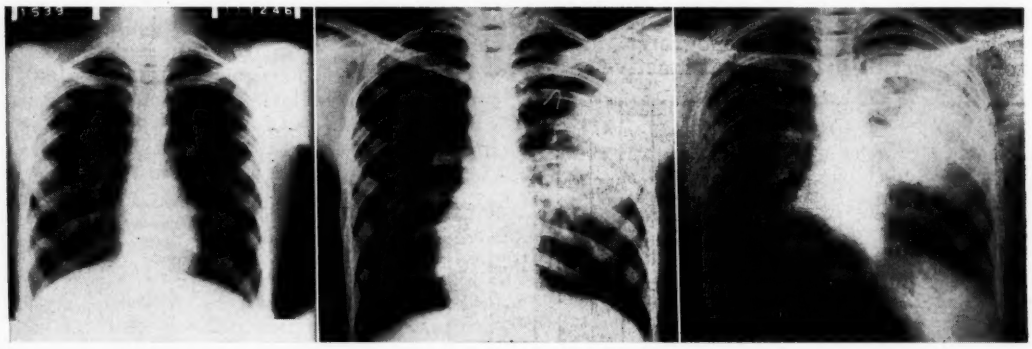

FIG. 3. Series of chest roentgenograms of a Latin-American student (case 1).
Left. November, 1946. The roentgenogram is negative. The student showed no symptoms of tuberculosis and gave a history of several previous negative roentgenograms.
Center. March, 1947. The roentgenogram shows heavy infiltration in the right upper lobe. The student's sputum was positive, and he suffered fever, sweats, and loss of weight.
Right. April, 1947. A roentgenogram taken after the student was placed in a tuberculosis sanatorium.

Warning has been sounded already against too much dependence on photofluorography and omission of the other control agencies. In fact, the blind worship of roentgen ray may be credited with the tendency in many colleges, reported by the Committee, to exempt the returned veteran from survey campaigns because he has recently been screened by photofluorography and reported negative. In the college age group cases develop every year within the space of a few months and become dangerous sources of infection. At the University of Texas we have had experience that emphasizes these dangers. The following case reports will illustrate.

CASE REPORTS

CASE 1.—P. R. A., a 21 year old Latin-American boy, was reported negative in a November photofluorographic survey. He became ill in the last two weeks of the following February, complaining of fever, pleurisy pains, night sweats, and loss of weight, and he was coughing and expectorating persistently. He was hospitalized and found to have pulmonary consolidation in the right upper lobe. Sputum and roentgen-ray examinations both were positive for tuberculosis. Although negative to roentgen-ray in the fall, four months later in his infection literally exploded in our faces and became a dangerous focus that could have infected many contacts, had we assumed he could not have tuberculosis because he had recently been screened.

CASE 2.—J. J. H., a 22 year old returned veteran, was discharged from the Navy in August, 1946, without disability. He entered school in September. He avoided the first survey in November because he had so recently been subjected to roentgen-ray, but was included in the compulsory March survey.

At the time of the survey he was a senior and as soon as he completed the semester he was ready to make application to medical school. Although he had lost weight, was thin, had a productive cough, and did not feel up to his usual vigor, he disregarded these symptoms in his eagerness to complete the schedule he had set for himself. The roentgenogram was positive and acid-fast germs were present in the sputum. We know he was negative to tuberculosis tests on discharge from the service, but we do not know how long he had had active tuberculosis or whether he had infected other students.

UNIVERSITY OF TEXAS PHOTOFLUOROGRAPHIC SURVEY

A photofluorographic survey at the University of Texas was made possible when the Regents accepted the offer of the Texas Tuberculosis Association to sponsor and underwrite the expense of the survey. The stated objective was to determine the size and importance of the problem of tuberculosis in student health. It was also expected that statistics and experience gained in this effort would be useful to college projects all over the state and that interest could be aroused which would aid the general campaign to establish control units in every college in the state.

Faculty, employees, staff, and students were included and photofluorographic pic-

tures were made of a total of 17,325 persons. It was found impractical to trace down every campus inhabitant, and an estimated 1,500 failed to participate. This invalidates the percentages to some extent, but the results give a fair sample of chest conditions. An estimated 65 per cent of those examined are veterans who have been thoroughly screened and supervised for several years just prior to admission. Skin tests were not done because of insufficient personnel and facilities to handle so large a group. Dr. Howard Smith, chief of the Tuberculosis Division of the State Health Department, read all films,

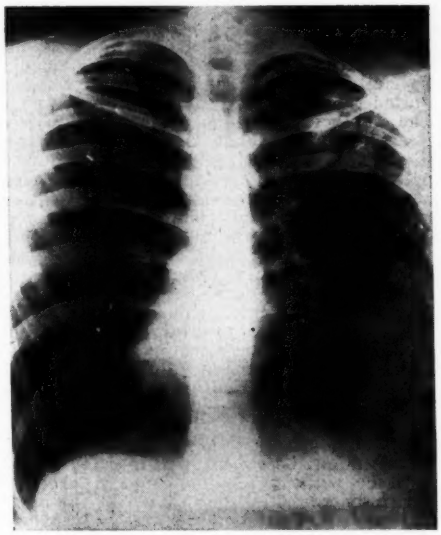

FIG. 4. Positive chest roentgenogram of an Anglo-American student (case 2) taken in the compulsory survey in March, 1947. He was discharged from the Navy without disability in August, 1946, and did not participate in the noncompulsory survey in November, 1946.

so that the personal equation is simplified. No diagnoses were made from photofluorographic pictures, but all who had anything other than a negative reading were asked to come in for regular 14 by 17 inch roentgenograms, from which diagnoses were made. Table 2 summarizes the results:*

TABLE 2.—*Summary of Results of a Tuberculosis Survey at the University of Texas.*

	Films	Neg.	TB.	Non TB.	Re-takes	% TB.
Students	16,320	16,096	72	83	69	0.4
Faculty	277	266	6	4	1	2.1
Staff	222	215	5	2	..	2.2
Employees	506	487	8	10	1	1.5
Total	17,325	17,064	91	99	71	0.5

*AUTHOR'S NOTE.—A tabulation completed after this paper was presented revealed that 11 students had tuberculosis active enough to require withdrawal from the University and treatment in a sanatorium.

PROBLEMS

Roentgen diagnoses of tuberculous pathologic lesions are classified as to stage and activity, but as may be seen from a survey of the terminology, many cases are left to clinical study for final disposition. This means delay and poses many perplexing questions. Some problems raised by the survey are as follows:

1. What standard qualifications should an ex-tuberculous patient meet to be classified as inactive?

2. What should be done with patients who are certified by their home physicians as "arrested" when they do not meet the college standards?

3. How often should roentgenograms be required of persons of various age groups classified as inactive?

Two cases point up some of these questions:

CASE 3.—H. C. H., a 25 year old male student, received classification in our survey as having chronic, bilateral pulmonary tuberculosis, active. On interview he stated that his disease had been discovered in 1941 but that his physician required him to rest only a few hours daily, and that since his sputum was found to be negative on several occasions the physician had finally classified the disease as inactive and permitted him to resume his usual activity. We found his sputum positive on two occasions and secured his previous roentgenogram which showed clearly that his disease had been slowly spreading during the past two or three years. He reluctantly withdrew from school.

CASE 4.—N. C. H., a 29 year old returned veteran, classified in our survey as having active tuberculosis, stated that he was under treatment by a local physician who had frankly admitted that the question of activity was in doubt, but saw no reason why he should not continue in school. He gave history of diagnosis first in the Army with hospitalization for approximately a year. Although the disease was not yet classified as inactive, he requested and received discharge and promptly entered the University.

Although we know from the survey that 90 patients with tuberculosis in various stages of activity have been present on the campus, we still do not know how many infections are in the group because we do not have the list of positive reactors to tuberculin. If the national average percentage reported last year is considered, there should be more than 1,000 persons under supervision, for it is from the tuberculin positive reactors that the next active cases will come.

Since faculty and staff personnel showed a higher rate of tuberculosis than students, they must be kept under supervision, if the disease is to be controlled.

If we have learned anything the hard way in this study, it is that cases can develop rapidly and spread disease in spite of photofluorographic surveys, and that supervision over several years with serial films is no

guarantee that a college student will not develop active tuberculosis provided he acquires the infection or has had it in childhood. Therefore, the control that counts uses all the tools intelligently to round up and drive out every source of infection in the college community.

SUMMARY

1. Although the effort to control tuberculosis in American colleges has grown from six programs in 1931 to 362 in 1946, Texas with 125 colleges that enroll more than 100,000 students from a population ranging above the national average in tuberculosis mortality still has no effective control units in operation.

2. Tabulations of the Tuberculosis Committee of the American Student Health Association show that schools operating control programs find from 12 to 18 times as many cases as do those who make no special search for the disease.

3. Requirements of control are satisfied by any arrangement that finds, isolates, and excludes active disease from contact with the student body. In practice, nonstudent personnel of campus and community serving students intimately must also be included in the supervision.

4. Schools with limited facilities will now be able to start their work by use of official agencies, such as the State Health Department and Texas Tuberculosis Association, until they are able to operate independently.

5. The falling rate of reaction to tuberculin makes the test indispensable from the standpoint of economy, efficiency, and the educational interest.

6. Experience at the University of Texas emphasizes the importance of the warning that too much dependence should not be placed on photofluorographic surveys alone as a control effort. However, annual preliminary tuberculin tests to identify the persons requiring close supervision, followed by roentgenograms of their chests at six to twelve month intervals, will provide a program of adequate efficiency.

7. A photofluorographic survey of 16,320 students located 72 cases of significant disease, a rate of 0.4 per cent. A survey of 1,005 faculty, staff, and employees provided 19 additional cases, or a rate of 1.8 per cent. Since the latter group shows a rate of 4.5 times as high as that of students, the need to include them in control supervision is obvious.

8. Questions and problems raised by the survey are presented.

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Scarbrough Building.

ABSTRACT OF DISCUSSION

Dr. J. Leeper Hawley, Dallas: It is a known fact, superfluous to repeat, that tuberculosis takes a heavy toll of lives between the ages of 15 and 35. Dr. Johnson has capably presented the extreme inadequacy of the control of tuberculosis in the colleges of Texas. It is therefore necessary to strive to obtain some form of tuberculosis control in each college as soon as possible. This need has not only been pointed out by persons working in the field of medicine, but especially by the Tuberculosis Associations and the United States Public Health Service, coupled with the Tuberculosis Division of the State Health Department. It is evident that if tuberculosis is sought, the cases will be found.

It will be a tremendous task to set up a control program in the 125 Texas colleges, but if each college will realize the tremendous importance of such a program and give it adequate thought, many aids will appear. Such procedures as tuberculin testing, requesting state or local photofluorographic examinations, as well as obtaining secondhand fluoroscopic or x-ray equipment, will at least be a basis for each college control program. It is possible to secure photofluorographic pictures of all college students if a schedule is made with the Tuberculosis Division of the State Health Department or with local official agencies or tuberculosis associations. If such a schedule cannot be worked out, some interested local physician with an intense interest in tuberculosis might be called upon to offer his services, with or without remuneration, in order that his community might be represented in the over-all control program. It cannot be stressed too much that although there are programs which might be considered ideal, no school or college should exist without some form of tuberculosis control. This can be accomplished very easily, provided the will to do something is present, regardless of the small basis upon which the program must begin. In time the program will grow.

It is certainly the best procedure to secure an adequate tuberculosis examination of each student, faculty member, and employee at the beginning of each school year; however, if this is not possible, it should be done at the earliest possible moment. The survey, or examination, should be made annually and all cases of suspicious tuberculosis, so-called arrested cases and positive reactors to the tuberculin test, must be under the supervision of competent medical personnel.

Although it has been pointed out by Dr. Johnson that the schools with limited facilities should require an admission certificate of a recent negative tuberculin test, or a certificate of a positive skin test and a recent negative roentgenogram, it must be borne in mind, without offense to any qualified physician, that certain doctors might be prone to sign a statement without an adequate examination or else be inadequately prepared to give a satisfactory opinion concerning the status of the student entering college. This, of course, does not mean that all students entering college should see a chest specialist, as there are undoubtedly a tremendous number of conscientious and competent general physicians.

There is absolutely no reason for penalizing the student with tuberculosis which has become arrested or apparently cured. The interpretation of the status of the inactive case must follow the criteria set forth by the committee on diagnostic standards of the American Trudeau Society. Therefore, persons with so-called inactive tuberculosis, either arrested or otherwise, should receive adequate roentgen examination and several concentrated sputa examinations at not more than six month intervals.

I assume that each of you will bear in mind that I am not only considering the students, but also the faculty members and employees of the institution. Wherever possible, the survey should be extended to the members of the families, in order to pick up any case of tuberculosis which might be the very source which is sought.

The tuberculin test, as always, has been a controversial matter; but the accepted authorities agree upon three features: (1) The test is a strong educational procedure and will bring to the physician and the x-ray unit many of the persons in contact with the positive reactor. (2) It is also of benefit where x-ray facilities are unobtainable or prohibitive. (3) Finally, the tuberculin test is an index to the efficiency of the control measures carried on in the community. It might be stated that as many as 400 or 500 tuberculin tests can be given within an hour and read in less time. The intradermal method should be used.

It is true that the percentage of positive reactors throughout the United States is falling, but this decrease is unquestionably due to more adequate control programs which are in existence elsewhere and only beginning in Texas.

The accepted procedure of screening is by roentgen ray, preferably photofluorography. This procedure is less expensive, more efficient, and leaves a record which can be referred to at a later date.

It has been mentioned that photofluorography is a form of magic, but the reading of survey x-rays, either 14 by 17 inch paper film, 35 mm., or 70 mm. films, requires a degree of efficiency which comes only through constant reading of many roentgenograms. Even recognized specialists in tuberculosis must adjust themselves to the different types of film in order to give an accurate interpretation. It has been shown in large surveys that 95 per cent of the films read can be depended upon to be negative; the remaining 5 per cent consist of suspicious tuberculosis, definite tuberculosis, nontuberculous pathologic conditions, and unsatisfactory films. Although it might possibly be done, it is hazardous to diagnose pulmonary tuberculosis from a photofluorographic picture alone. Careful examination of such pictures will reveal suspected cases which must be followed very closely.

Concerning the examinations of returned veterans, who constitute the major portion of the campus population, it must be stressed that many of these persons have either developed pulmonary tuberculosis following separation from the service or received a misinterpretation of the roentgenograms made upon their separation. It has been pointed out in the paper just presented that certain students have developed active pulmonary tuberculosis after entering school. It is most important to recognize the fact that Latin-Americans, Negroes, and certain other races do not resist this disease very well, and as a consequence may become not only dangerously ill, but a source of infection to other students and faculty members in a very short time.

The recent compulsory screening of the students, faculty members, and employees at the University of Texas shows the necessity for continuing this procedure annually.

There is only one suggestion which I have to make concerning the statistics of this survey, and I am sure that the omission was not intended. Roentgenograms classified as suspicious tuberculosis should be recorded, tabulated, and a careful follow-up made upon the persons concerned.

As to the problems of the control of ex-tuberculous patients and those persons who enter school with a certificate from their private physicians stating that their diseases are arrested, it should be stated that wherever competent tuberculosis consultation is available to the college it should be used; and where it is not, every case of tuberculosis should be evaluated properly and adequately by the medical director in charge of the college. This procedure should include contact with the home physician, periodic sputa examinations and periodic roentgen examination, neither of the latter to be less frequent than every six months and preferably every three months. This does not mean that persons who have conquered this disease should be exploited or excluded.

There are two reasons for including faculty members and employees of the college, namely, to find any case of pulmonary tuberculosis which might exist and also to stimulate the students to follow their leaders in securing adequate examinations.

I think that the Medical Board of the University of Texas, the Texas Tuberculosis Association, and Dr. Howard E. Smith of the Tuberculosis Division of the State Department of Health should receive the congratulation of each Texan.

Dr. L. W. Fetzer, Dallas: As a physician, an educator, and an attendant of two International Congresses of Tuberculosis, I liked Dr. Johnson's paper very much. My interest now is to find out from what towns and cities the various students, faculty members, and other workers came, and whether they served in the armed or civil forces of the United States, at home or abroad. That information will be useful in epidemiologic and epizootiologic studies.

Dr. C. B. Young, Tyler: I wish to congratulate Dr. Johnson for his excellent paper and also for his emphasis of the importance of the tuberculin test. Unfortunately some chest specialists apparently believe that there is no place for the tuberculin test in the fight against tuberculosis.

The second point that I wish to emphasize is the value of surveys from an educational viewpoint. As Dr. Johnson pointed out, the actual incidence of tuberculosis among college students is relatively small and if the search is for active tuberculosis, it would be better to make roentgen examinations of teachers, janitors, and so forth, or better still, of all low income industrial workers.

Dr. Matthew J. Noon, Dallas: I am familiar with the work done at the University of Texas through Mrs. Marie Clark Peik, field consultant of the Texas Tuberculosis Association. I think the survey was a grand job.

It is essential to remember a fact emphasized by Dr. Elliott Mendenhall in his paper yesterday.* There is too great a spread between finding cases of tuberculosis and the number of patients admitted to sanatoriums. Although many minimal cases are being found, the percentage of far advanced cases admitted to Woodlawn Hospital, Dallas, with which I am connected, is still very high.

To rule out activity because of negative sputum, it is essential to know who did the examination and what method was used. Sometimes some of our minimal cases never show a positive sputum on the usual examination. Serial roentgenograms are essential for the true evaluation of activity, especially in smaller lesions.

It is hoped that this survey will be continued at other schools and that at some future date all of

*Mendenhall, E.: Tuberculosis Eradication—a Possibility, Texas State J. Med., to be published.

the students in Texas colleges will have been screened.

Dr. R. B. Wolford, Dallas: A large percentage of the student bodies of the colleges at present are veterans, and a large part of my duties as Regional Medical Officer of the U. S. Civil Service Commission is endeavoring properly to place physically impaired veterans in federal positions. A large number of records of veterans with tuberculosis or arrested tuberculosis comes to my desk for an opinion, so that I appreciate getting this information as to the effort in the colleges to control the spread of the disease.

Dr. Johnson, closing: One of the problems in a survey of a large group is the difficulty of getting 100 per cent participation. The few omitted may possibly alter final percentages materially because in the small numerical number of actual infections present in the group, easily half of those concerned could avoid the examination for fear that discovery of their disease might lead to restrictions or even rejection from the student body. Therefore to have the survey a compulsory condition of admission and conducted at the time of entrance seems to be a necessary requirement for efficient and dependable control.

Since roentgenographic reports leave many cases uncertain regarding activity, final classification must await clinical studies. We are not yet able to give the exact number of active infections in our survey just completed nor to compare our findings with those of other colleges, but if the emphasis given the disease by the survey arouses interest on campuses of other schools in Texas, one of our immediate objectives will have been achieved.

THORACIC SURGERY: ITS PRESENT SCOPE

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Our concepts and management of surgical lesions within the thorax have changed radically since the advent of chemotherapy. Prior to the use of sulfonamides and more particularly before the use of penicillin and streptomycin, visceral surgery within the thorax was extremely hazardous owing to the high incidence of postoperative complications resulting from infection. Since these hazards have been eliminated almost completely, many refinements in technique and many new operative procedures have been developed in the treatment of intrathoracic conditions for which, heretofore, there was no specific treatment. In addition, extensive experience with war casualties has brought about further developments, more conservative management in some respects and more radical in others. I therefore wish to present briefly the present status of thoracic surgery, primarily the clinical aspects of the conditions that are now amenable to safe surgical treatment and without special reference to operative or technical details.

Read at a general meeting of the State Medical Association of Texas, Annual Session, Dallas, May 6, 1947.

TRAUMA

In view of my recent extensive experience with trauma to the thorax, it is only fitting that I call attention to a few extremely important aspects of the management of the more common serious thoracic injuries. Because of the increasing incidence of severe civilian injuries, it is well that physicians have some general idea of the management and basic principles in the surgical treatment of chest injuries. The success of the treatment of these serious injuries and, for that matter, the management of all surgical thoracic conditions, depends on a knowledge of the physiology and intrathoracic dynamics. An immediate and constant effort should be made to return to normal any pathologic or abnormal change in these factors, thereby returning the function of the important systems within the thorax to a normal state. Practically all penetrating and a great many nonpenetrating wounds of the thorax are associated with varying degrees of hemothorax. Upon the management of this hemothorax, both immediate and late, will often depend the survival of the patient from his original injury, or at least the avoidance of sequelae or serious complications requiring various major surgical procedures for their cure.

The immediate management should be conservative and should consist of treatment for shock, administration of oxygen, control of pain by adequate use of opiates, and extremely close observation of the shifting dynamics within the thorax. It is well to remember that a large proportion of intrapleural hemorrhage is the result of laceration of the parenchyma of the lung and that this hemorrhage is self-limiting owing to the fact that, as the amount of blood in the pleural cavity increases, the lung collapses and is compressed and the bleeding is stopped. It is therefore undesirable to aspirate at this immediate stage unless there is a progressive shift of the mediastinum to a point where, even with the administration of oxygen, it appears that the patient will not survive. Then only small amounts are aspirated, sufficient to overcome this extreme shift and relieve the respiratory embarrassment and at the same time not reactivate the bleeding. If after aspiration there is a recurrence of the shift and continued signs of increasing intrapleural pressure, it is most probable that a large hilar vessel or an intercostal or mammary vessel is involved and an exploration of the thorax is indicated. It is only in a very rare case, however, that major surgery will be necessary at this stage.

After the acute shock and hemorrhagic stage has passed (four to seven days), it becomes imperative to aspirate or remove the

blood within the pleural space. This is best done by repeated aspirations; if for any reason the blood has become coagulated, it becomes necessary to do a thoracotomy and remove manually the large fibrinated masses and fibrin coating of pleural spaces, the so-called decortication operation. Complete removal of the accumulated blood by one of these methods is absolutely essential, to allow complete reexpansion of the lung and to avoid the development of extensive infection throughout this medium. If this is not accomplished, the lung will remain permanently collapsed and a fibrothorax will develop, with subsequent bronchiectasis and sequelae requiring multiple major surgical procedures for their correction.

Another common serious injury of the thorax is the syndrome of crushed chest. I mention it primarily because survival of these patients depends entirely upon instant and correct treatment by the first physician who sees the patient. These patients are in severe shock and in severe respiratory distress, unconscious and uncooperative. The crucial problem in these cases is the recognition and immediate management of their tension pneumothorax. One lung or both lungs may be lacerated and a tension pneumothorax developing rapidly, with progressive pulmonary collapse, shift of the mediastinum, and encroachment on the vital capacity to a point eventually incompatible with life. In most instances there is some leakage of the air into the subcutaneous tissues with extensive subcutaneous emphysema, which is pathognomonic of this condition. It is owing to this temporary safety valve that these patients survive long enough to be seen by a physician.

The treatment is simple and effective. A large caliber needle is introduced into the chest and connected with the tubing below a water trap. If there is bilateral pneumothorax or tension pneumothorax, this continuous decompression must be applied to both sides. Intensive treatment of the shock and administration of high concentrations of oxygen also are essential. The patients have then to be watched with extreme care, and as hemothorax frequently develops, it may be necessary at any time to introduce an intercostal catheter for suction drainage in addition to the decompression with the needles. The majority of these patients can be saved and the critical disturbance in their intrathoracic dynamics corrected. In a certain percentage of cases, however, death will eventually be caused by the development of renal suppression and anuria. For this latter state, no specific treatment has been found to stimulate the function of the kidneys. The physician should seriously consider the use of intraperitoneal irrigations in the hope of tiding these patients over this period of acute renal shutdown.

Many other common and serious special types of thoracic injury require treatment by thoracic surgeons, but it is important that all physicians have a general idea of some of the more common problems described in the management of hemothorax and crushed chest.

INFECTIONS

The second group of conditions of considerable importance is the intrathoracic infections. The simple problem of empyema may still become a complicated and serious situation unless certain fundamental principles are observed. The adequate use of penicillin has decreased the incidence of complications of this condition. Repeated aspirations and instillation of large doses of penicillin in conjunction with its systemic administration will cure, in a relatively short time, a high percentage of these conditions, which formerly required prolonged and adequate drainage. It must be pointed out, however, that there are other factors, particularly of a mechanical nature, which must be kept in mind at all times in any form of therapy of empyema, if the chronic and fibrotic stages are to be avoided. It is common knowledge, and an extremely simple matter that the pus in one of these empyema cavities can be sterilized by a few aspirations and instillation of penicillin. This alone is not adequate, since probably the most important factor of all in the adequate management and prevention of chronic empyema is the continued removal of secretions to aid the rapid obliteration of the cavity by expansion of the lung. If this is not accomplished, pleural thickening and fibrosis will develop and a permanent cavity will be established in spite of control of the infection. Aspirations must, therefore, be continued systematically until the cavity is obliterated, and if at any point this process seems to be at a standstill, an intercostal catheter should be introduced and put on suction to accomplish rapid obliteration of this cavity. Only by these combined methods can chronic empyema be avoided with its serious complications, and difficult Schade types of thoracoplasties be avoided.

The intrapulmonary infections are a much more complicated problem. The extremely serious problem of lung abscess has been simplified and the problem has become much less hazardous. For one thing, a large proportion of lung abscesses can be cured medically provided they are diagnosed early and a prolonged and intensive treatment with penicillin, sulfonamides, and in some in-

stances streptomycin is used. A large proportion of these cases can now be expected to resolve spontaneously. Likewise, there is no reason for a radical surgical procedure in the acute phase as there has been in the past. There will still be a certain percentage of patients with chronic lung abscesses, however, who will require surgical treatment. In the past, surgical drainage was the treatment of choice, and this was frequently accompanied by serious and often fatal complications. The present treatment is extremely satisfactory. The patients are given a course of penicillin intramuscularly and by aerosol preoperatively, and then a resection of the lung involved is carried out with great safety and with a minimum of postoperative complications.

Bronchiectasis still continues to be one of the most important surgical conditions of the thorax. Unlike lung abscess, there is little that can be done to prevent this disease and, once established, it cannot be cured medically. Surgery does offer an excellent cure for these patients; even those with widely disseminated diseases can now be managed satisfactorily from a surgical standpoint. It is absolutely essential at the beginning of the management of bronchiectasis cases to obtain a perfect and complete bronchogram to determine accurately the exact extent and location of the disease before any plan for its surgical eradication is carried out. Too many of the failures are due to an initial incomplete visualization, resulting in an inadequate surgical removal of the disease, which is followed by failure to relieve the patient's symptoms. If the disease is confined to a single lobe, lobectomy is the treatment of choice. If the disease is bilateral or disseminated in various lobes on both sides, the exact segments of the lobes involved may be identified and a planned, staged resection of these segmental portions of the lobes carried out, preserving the normal segments of the lobes so that the patient eventually will have sufficient functioning lung to carry on normally. This is a distinct advantage and definite progress in the management of the disseminated types since multiple lobectomy for disseminated disease usually left the patient seriously handicapped by his relatively small, residual, functioning lung.

In either case, that is, in either lobectomy or segmental lobectomy, the patients can be brought safely through the multiple stages of operation by careful preparation with penicillin intramuscularly and by aerosol preoperatively, a properly administered intratracheal anesthesia, careful control of shock at all times, meticulous individual ligation of the hilar structures, and all aids to rapid reexpansion of the lung and the prevention of residual infection by the intensive use of penicillin postoperatively. This treatment has decreased considerably the incidence of postoperative infection and fistulas and makes these procedures extremely satisfactory in the management of both lung abscesses and bronchiectasis.

In general, however, the postoperative complications mentioned are more common in the segmental types of resection than in lobectomy. Therefore, segmental lobectomy should be reserved for those patients with disseminated disease in whom there is a distinct necessity for preserving all normal lung tissue.

A brief discussion of the surgical management of pulmonary tuberculosis is also indicated at this time since there are some new developments in this field as well. It should be stated that there is little change in the indication for or technique of collapse therapy and that it is still the treatment of choice in the large majority of cases. Recently, however, there has been considerable tendency toward more radical treatment, particularly pulmonary resection for tuberculosis, and there is no question but that there are definite, recognized indications for pulmonary resection in tuberculosis. The use of pulmonary resection in the average case, which in the past was treated by some form of collapse therapy, has been tried and the end results, particularly after a five-year follow-up, have proved quite unsatisfactory as compared with the results of the standard forms of collapse therapy. The reason for this is that tuberculosis remains a general infection, a systemic disease, and it is impossible to remove it by surgical extirpation except in selected cases.

It is my opinion that pulmonary tuberculosis associated with bronchial stenosis and superimposed pyogenic bronchiectasis; large abscesses, particularly of the lower lobes; and the tuberculomas are best handled by pulmonary resection. At the clinic we have recently combined pneumonectomy for tuberculosis with the use of large doses of streptomycin and in each case have had good result without postoperative complications. Likewise, we have used large doses of streptomycin in the acute pneumonic type of tuberculosis, with extremely gratifying results. As yet we have not used streptomycin in average fibrotic and cavitated forms of tuberculous infections treated by collapse therapy (pneumothorax or thoracoplasty).

There are two other types of thoracic infections which deserve mention, that is, subdiaphragmatic abscess and mediastinitis. Subdiaphragmatic abscess usually follows

appendicitis or duodenal ulcer with perforation, or gastro-intestinal or biliary surgery. If a patient following this type of abdominal surgery begins to run a systemic reaction and shows signs of residual infection, and the operative field, the wound, the urinary tract, and the respiratory tract do not show signs of infection sufficient to account for this reaction, involvement of the subdiaphragmatic area should always be suspected. Roentgenograms are of great value in demonstrating a high diaphragm with the characteristic reaction above the diaphragm, and frequently, if they are taken in varying positions, a shifting bubble of gas within the abscess may be demonstrated.

Once the diagnosis is established, it is necessary to drain these regions adequately; this can be done through the bed of either the eleventh or the twelfth rib. The lower approach is recommended in order to stay extrapleurally, although in 40 per cent of the cases the pleural reflection comes down as far as the twelfth rib. A more direct and more satisfactory approach can be made through the bed of the eleventh rib, although it becomes necessary to suture the costophrenic reflections of the pleura together very carefully before opening the diaphragm. These patients respond quickly to adequate drainage.

I also wish to refer briefly to the serious problem of mediastinitis, since it is more commonly seen now that there is an increasing amount of instrumentation of the esophagus. In esophagoscopy or dilatations associated with friable lesions it is possible to produce readily a fulminating mediastinitis even without gross perforation. Therefore, the physician must be alert to this possibility and to the necessary immediate treatment if the patients are to survive. These patients complain, during the procedure or immediately thereafter, of severe pain in the substernal region, or epigastrium, or into the back, and there is an immediate systemic reaction with marked elevation of the temperature and white blood cell count. The patients should immediately be given massive doses of penicillin, both intramuscularly and intravenously and a posterior mediastinotomy for drainage should be carried out at once. If treated adequately in this manner, the majority of these patients will survive this serious mediastinal infection, which used to be almost uniformly fatal.

It has been my experience, therefore, that with the proper use of penicillin and the improved surgical techniques outlined, the majority of serious intrathoracic infections can now be managed very satisfactorily from a surgical standpoint.

TUMORS

The third large group of intrathoracic pathologic conditions of surgical importance is made up of tumors. A good many mediastinal tumors are benign, but the majority of the intrapulmonary tumors are malignant. The benign tumors are usually diagnosed by finding them on a routine roentgenologic study of the chest or a roentgenogram taken because of vague symptoms resulting from pressure either on nerve roots, producing pain, or on the bronchus, producing cough. The common benign tumors are the bronchiogenic cysts, dermoid cysts, teratomas, neurofibromas, and ganglioneuromas. Surgical removal is indicated; it is a safe procedure and results in a cure in most instances.

Of the intrapulmonary tumors, bronchiogenic carcinoma is by far the commonest and most important classification. Even though this is a common form of carcinoma and the early symptoms are well recognized, a large proportion of patients still come to surgery at an inoperable stage. Since pneumonectomy is now a highly standardized and safe procedure, it is extremely important that the tumor be diagnosed at an earlier stage so that these patients will have a good chance of cure, especially when the tumor is of the lower grade epidermoid types. Bronchiogenic carcinoma produces two types of clinical symptoms, both of which tend to delay adequate diagnosis and treatment. In one group the patient develops a chronic cough, usually productive and often blood-streaked, which the patient himself will not consider of any great significance. He may not seek medical advice or, if he does, he may be treated symptomatically for many months, until pain or general debility develops, making it quite obvious that some serious disease is present, at which point roentgenograms and bronchoscopy are done and the lesion is found to be far advanced.

In the other group the patient has somewhat similar early symptoms of cough, but suddenly, during the progress of the disease, an acute pneumonitis develops behind the obstructing lesion, with a clinical picture identical to that of pneumonia. Unfortunately, a large proportion of these patients are treated for pneumonia and it is not until some months have elapsed and the patient's condition is still steadily becoming worse and the physical signs of the pneumonia have not resolved, that it occurs to the patient or the physician to suspect the presence of some basic serious disease other than the pneumonia. A bronchoscopy at this time reveals an extensive carcinoma, usually at an inoperable stage.

Many pleas have been made for early diagnosis in carcinoma, and I add my own plea. Persistent, productive cough must be considered a serious symptom; a roentgenogram of the chest should be taken and interpreted carefully and any abnormality should be followed vigilantly or checked further by bronchoscopy. Unfortunately, some lesions peripherally located or associated with the upper lobe bronchus are impossible to reach by bronchoscopy. Such patients, however, will show a definite, suspicious, progressive lesion on roentgenologic examination, and the majority will require an exploratory thoracotomy if the disease is to be diagnosed at an operable stage.

Total pneumonectomy with resection of the hilar and mediastinal nodes, in conjunction with penicillin, can be done with great safety with an extremely low incidence of residual infection or bronchial fistula. The improvement in results now depends greatly on a much earlier diagnosis in this type of serious pulmonary lesion.

ESOPHAGEAL DISORDERS

Considerable advancement has also been made in the surgical treatment of diseases of the esophagus. The majority of the surgical lesions of the esophagus are obstructive and, therefore, the symptomatology of all of them is similar. Here again, penicillin and sulfonamides have changed transpleural and mediastinal esophageal surgery from a dangerous procedure to one of relative safety. As a result, the surgical removals of the obstructing lesions of the esophagus have become standardized procedures. Since most of these lesions are serious and produce various degrees of dysphagia, regurgitation, and substernal pain and distress, it likewise becomes important that the patients receive adequate study both by roentgenography and by esophagoscopy if indicated. Even though a large number of neurasthenic patients have similar symptoms, they should not be treated symptomatically without adequate study if such lesions are to be discovered at an operable and uncomplicated stage. The symptoms are often of great significance since they frequently are caused by such important clinical diseases of the esophagus as esophagitis, cardiospasm, diverticulum, or tumor. Diverticula are not uncommon, especially at the upper end of the esophagus, although we have had a small series of cases involving the thoracic esophagus. When the sacs of these diverticula reach a certain size, they produce obstruction of the esophagus and a progressive decline in the nutritional state of the patient. In order that the patient can be well again it becomes necessary to remove a diverticulum of this type. Although in the past it has been considerably safer to do these in one stage to excise diverticula aseptically, and by the use of penicillin to avoid the danger of mediastinitis, which was the chief indication for performing this operation in stages.

Esophagitis is a fairly common condition and is frequently associated with a peptic ulcer either in the stomach or the duodenum. The findings are dilatation above the area involved, acute and chronic stages of inflammation in the mucosa, varying degrees of ulceration, and hypertrophy and fibrosis of the walls, with or without stenosis, and are frequently associated with cardiospasm. There are varying degrees and grades of this condition and it is important to rule out carcinoma by repeated examinations by esophagoscopy and numerous biopsies. Likewise, since patients with marked esophagitis often do not respond to the conservative measures of a dietary regimen, chemotherapy, and dilatations, it is possible that in certain of these cases the esophagus will have to be placed at rest by performing a gastrostomy. Also, in rare cases of severe and long-standing esophagitis without malignant degeneration, I have found that conservative measures, dilatations, and gastrostomies have failed, and these patients have required transpleural resections, displacing the stomach into the chest for anastomosis above the involved area. We have had similar cases of strictures resulting from caustics or trauma and long-standing cardiospasm with stenosis, in which it was necessary to resect the involved segment of the esophagus and reestablish the continuity of the intestinal tract by bringing the mobilized stomach into the chest for anastomosis above these lesions.

Tumors of the esophagus occur frequently, but by far the majority of them are malignant and carcinomatous. In my experience, a few benign tumors have been encountered which have been chiefly esophagenic cysts, polyps, fibromas, and leiomyomas. These are of two types, that is, the intraluminal type, which produces obstruction by displacing the lumen of the esophagus, and the intramural type, which produces obstruction by deforming the lumen. Transpleural resection of these benign tumors is the treatment of choice and can be carried out with great safety and with excellent end results.

Patients with persistent progressive dysphagia, however, usually are found to have carcinoma. The condition should not be allowed to progress to absolute dysphagia for

solid foods before adequate studies are made since most of these cases will be inoperable at that stage. Any abnormality by roentgenologic examination should be studied further by esophagoscopy and a biopsy specimen taken. Once the diagnosis is established, a decision must be made as to whether a one-stage or two-stage operation is indicated, based on the nutritional and general state of the patient. It is possible that the patient may need a preliminary simple gastrostomy for feeding purposes in order that the nutritional state may be improved suitably for the major transthoracic resection. With the proper control of the patient's nutritional state and the adequate use of penicillin and sulfonamides preoperatively, as well as during the postoperative period, the majority of these tumors can be resected if operable, and the patients will survive operation without complications.

The esophagus now can be resected at almost any level and the continuity of the intestinal tract can be reestablished by completely mobilizing the stomach and displacing it in the thorax. This method is far superior to the old antethoracic artificial and skin tubes. With the technique now developed so that it is possible to anastomose the stomach and the esophagus at almost any level within the thorax, a great many of the higher lesions of the esophagus are operable, and I am willing to do even palliative procedures, in which the continuity of the intestinal tract is reestablished. Therefore, the operability for carcinoma of the esophagus has greatly increased, the end results are improving, and, as in the case of carcinoma of the lung, early diagnosis becomes the most important remaining factor in curing the patients.

HEART DEFECTS

No presentation of the present status of thoracic surgery would be complete without a brief reference to the significant advances that have been made in the surgery of the heart and its associated great vessels. Until the last few years, the only significant surgery done on the heart was for wounds, the drainage of pericarditis, and pericardiectomy and cardiolysis for constrictive pericarditis. Within the last few years, however, brilliant developments have been made in conjunction with congenital lesions of the heart and the great vessels.

The serious congenital lesion patent ductus arteriosus usually causes death at an early age from congestive heart failure or subacute bacterial endocarditis. This condition can now be cured surgically, especially if the procedure is done at an early age before there has been too prolonged damaging effect on the heart. The method consists of complete division of the ductus arteriosus after the technique developed by Gross. It is therefore essential that these lesions be discovered in childhood so that this surgical procedure can be done at the proper age.

The second congenital defect that lends itself to surgical treatment is pulmonary stenosis or atresia, which is most commonly associated with the tetralogy of Fallot. Since the most prominent clinical feature is marked cyanosis, and although there are many other important physiologic factors involved, it was the opinion of Blalock and Taussig that pulmonary stenosis could be benefited by a surgical procedure that would increase the volume of blood reaching the lungs. It was for this reason that Blalock developed his memorable operation of anastomosis of one of the branches of the aorta to one of the pulmonary arteries. Here, again, I wish to urge the necessity for the proper recognition of this condition at an early age so that these patients can be operated on in childhood when the best results can be obtained.

Our experience has been with adults in whom the technical difficulties are considerably greater, and profound physiologic changes which are practically irreversible have taken place in the cardiovascular system and lungs. Even though such patients can be brought through an operation successfully, they receive no striking benefit and also the operative mortality will be high.

The third congenital defect which can now be treated surgically is that of coarctation of the aorta. Here again early recognition and early surgical intervention is essential to obtain good results. Frequently these patients are asymptomatic until early adult age, at which time they deteriorate rapidly from the effects of hypertension, arteriosclerosis, rupture of the aorta, cerebral hemorrhage, or bacterial endocarditis. In a child an excision of the stenosis and an end-to-end anastomosis can be carried out according to the technique of Crafoord and Gross, and good results obtained. If this procedure is followed as a last resort, however, after the cardiovascular changes have developed in early adulthood, the operative mortality will be high and the benefit of the operation will be minimal. In the surgical treatment of all these congenital lesions of the heart and great vessels, the proper selection of cases at the proper age should give excellent results. The mounting series of successful operations in the medical centers throughout the coun-

try attests the therapeutic value and technical soundness of these procedures.

SUMMARY

This has been a brief presentation of the various pathologic conditions within the thorax which are now amenable to surgery. The surgery of all of these important intrathoracic lesions is now highly standardized and can be carried out with safety and with good results. Early diagnosis and careful surgical management are increasing operability and steadily improving the end results.

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THE ARMY POSTGRADUATE SURGICAL TRAINING PROGRAM

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The medical profession of Texas has a special reason to be proud of the new Postgraduate Medical Education Program of the Army since two of the approved training centers are in this state. Before the war the Medical Corps of the Army was not large enough to institute special medical training. During the war, for obvious reasons, there was no chance to begin long-term training programs in surgery or in the surgical specialties, although efforts were made at some of the Army general hospitals to give refresher type training courses both in this country and in the foreign theaters of operation. However, because of the rapid expansion of the armed forces and the need for sudden shifting of hospital personnel, it was impossible to work out a standardized training program. In the six years from 1939 to 1945, more than 46,000 civilian doctors served in the Army (not including those in the Navy, Public Health Service, and Marines) and medical specialization came to be recognized as a desirable attribute in medical officers. Certification by an American specialty board became an accepted routine measuring stick for determining professional ability of officers. As soon as the war was over, in the first thirty days after V-J Day, nearly 6,000 doctors were released from the service and within the next year a total of 45,000 doctors left the service. Immediately one of the problems of the Army was to return regular medical officers to strictly professional duties and it was this which initiated the professional retraining program. The Surgeon General's office announced the program for professional education for medical corps officers in Army Regulation 350-1010, February 11, 1946, which stated these objectives:

"a. Elevation of the general level of professional qualifications of medical corps officers.

"b. Provision of an adequate number of qualified professional and administrative specialists for the medical corps.

"c. Provision for opportunities for professional advancement in clinical and research medicine to medical corps officers on a competitive basis.

"d. Assurance of the maintenance of the health of the Army and provision for efficient care of the sick and injured in accordance with the highest principles of medical service by the establishment of all Army hospitals as teaching institutions.

"e. Development of teachers in the art and science of medicine by providing the necessary professional background and attainment.

"f. Provision by continuous demonstrative effort of responsible officers the development of adequate and approved facilities for graduate medical teaching."

The professional education program provided for Army internships, mixed residencies, residencies in medical and surgical specialties, postgraduate subspecialty training, and military medical research projects. I shall discuss only the residencies in medical and surgical specialties and their relation to postgraduate work.

The Surgeon General's office has designated the Army Institute of Pathology and nine Army general hospitals as properly qualified for graduate training in surgery and the surgical specialties, and these have been examined and approved by the Council on Medical Education of the American Medical Association. These are Brooke General Hospital, San Antonio; Fitzsimons General Hospital, Denver; Letterman General Hospital, San Francisco; Madigan General Hospital, Tacoma; Oliver General Hospital, Augusta, Ga.; Percy Jones General Hospital, Battle Creek, Mich.; Walter Reed General Hospital, Washington, D. C.; William Beaumont General Hospital, El Paso; and Army and Navy General Hospital, Hot Springs, Ark.

Provision was made for the augmentation of the permanent professional staffs of these hospitals by the appointment of civilian specialists as consulting or visiting staff

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members. The education of medical officers was also to be supplemented by assignment to formal courses of instruction at civilian teaching institutions. It was the purpose of the Army thereby to encourage regular medical officers to seek certification by the various specialty boards and to offer inducements to make this highly desirable. At the present time, more than 100 officers in the regular Army are certified in the various specialties and 71 others have had their applications approved. Moreover, about 160 medical officers have been assigned for training in anesthesiology, dermatology and syphilology, internal medicine, obstetrics and gynecology, ophthalmology and otolaryngology, orthopedics, pathology, pediatrics, psychiatry, radiology, general surgery, thoracic surgery, tuberculosis, and urology. In the current plans for the postwar Army, the Medical Corps is to have 2,750 officers. All of these will be given a chance to practice medicine rather than to perform administrative work, and about two-thirds of them will have the opportunity to go into the various specialties of medicine and surgery. It has been stated by the War Department that "the best interests of the Army and the officers will be served by keeping officers who are trained scientists or technical experts in one avenue of endeavor for the greater part of their entire service."

Circular 87 from the Surgeon General's office, dated November 21, 1946, has outlined in detail the teaching program to be following at the designated Army hospitals. The professional staffs are to be organized as regularly assigned permanent officers who will be teaching heads in the various branches. Insofar as possible these officers are to be certified or acceptable to the specialty boards. A staff of civilian consultants practicing in the vicinity of the hospitals who are certified by the various specialty boards is also to be appointed. In addition a house staff of student medical officers will be assigned for training. The house staffs are to be made up of chief residents, senior residents, residents, assistant residents, and interns. Chief residents are chosen from among senior residents, one on each major service of the staff; senior residents are those in their third year of training for the various specialties; residents are those who will be in their second year of training; and assistant residents in their first year of training. The interns are to be selected from male graduates of approved medical schools who are eligible for appointment as medical officers in the Organized Reserve Corps. They will be selected for one year of active service in a rotating internship. The various classes of residents will be chosen from the interns who have completed the one year of rotating internship and who are going on to further training in their chosen fields.

An essential part of the training for the house staff will be regular conferences such as clinical pathological conferences, tumor clinics, professional staff conferences, surgical conferences, medical conferences, neuropsychiatric conferences, radiologic conferences, and medical literature review conferences. Provision is also to be made for study in the basic sciences either in the Army designated hospitals or in approved civilian medical schools. Research projects by members of the house staffs will also be provided and are considered an essential part of the program. The scope of the residency training in general surgery will be designed to provide instruction in all phases of general surgery and its related specialties so that the trainees will be eligible for admission to the examinations given by the various American specialty boards. The stipulated amount of time devoted to conferences, literature reviews, basic science study, and experience in the wards and operating rooms is likewise designed to satisfy the requirements for postgraduate training as laid down by the various American specialty boards. At present, seven Army hospitals are approved for residency training in orthopedics, seven in radiology, six in internal medicine, five in general surgery, three in pathology, three in physical medicine, two in thoracic surgery, and one each in anesthesiology, psychiatry, and tuberculosis.

The chiefs of the various services in the designated Army hospitals will be chosen for their outstanding contributions in the various surgical specialties or for their certification by the American board for their specialties. The civilian consultants chosen to supplement the instruction program are to be physicians who are certified by the various specialty boards.

This entire postgraduate surgical training program has just begun but already it is apparent to the regular Army medical officers that it is highly desirable to choose a specialty field and to work toward satisfying the necessary requirements of one of the American boards. In addition, this program will serve to ease the pressure on civilian teaching hospitals that are providing postgraduate training in the surgical specialties. As is well known, there has been a great wave of renewed interest among physicians

in attaining specialty training and the present civilian specialty training centers are crowded with applicants. For the present the Army provides training for those seeking it either as Army officers or as temporary members of the organized Reserve on duty who have applied for regular Army commissions. In this way the medical standards of the Army will be improved immeasurably, and over a period of years a group of trained regular Army officers will be developed in the various surgical specialties.

It is obvious that the benefits from this program will be far reaching. The routine care of patients in Army hospitals will attain a much higher degree of proficiency, the regular Army will gain a nucleus of highly trained medical officers who will be available in any emergency, and in the event of subsequent war, the necessary expansion of surgical services will be much less haphazard because of the numbers of highly trained professional experts available.

While it is not a new idea to utilize professional civilian consultants for Army hospitals, this program will make available expert assistance to a degree never before attained.

April 7, 1777, in the Revolutionary War, Congress provided that there should be a Director General of all military hospitals and that he should appoint "physician generals" and "surgeon generals" to assist him in overseeing the work of the hospitals. In the Civil War, the Army of the Potomac employed physicians "obtained on the spot" but Surgeon General Hammond complained of the "bickerings among surgeons from civil life." Surgeon General Sternberg established the Army Medical School in 1893 and employed several civilian instructors, the most famous being Dr. W. W. Keen. In 1918, the A. E. F. copied the British example and sent "medical directors" to France. Since they had no authority their titles were changed to "chief consultants" for the remainder of the war. In surgery they included such men as Finney, Crile, Cushing, Goldthwait, Young, and Blair. This was the first time that medical consultants were utilized in combat units. In the most recent war, service command consultants and theater consultants were used wherever the Army fought. Most of these physicians were commissioned in the Army although a few civilian consultants were utilized in this country.

In this postwar training program, it is expected that civilian consultants will be available at frequent regular intervals. The consultants will gain opportunities to study large series of cases under ideal conditions, and the trainees will benefit from the experience of the civilian consultants, who themselves have been previously trained at well known surgical centers.

Texas has always taken a great interest in the regular Army, and the record of the physicians of Texas in the recent war reveals a much higher volunteer rate than of any other state. It is only natural, therefore, that two of the Army postgraduate training centers should be in Texas, at San Antonio and El Paso. The Brooke Army Medical Center in San Antonio is one of the largest Army convalescent centers as well as a vast general hospital. The civilian consultants from San Antonio have consequently a remarkable institution in which to carry on their teaching activities. In this relationship with the regular Army, the civilian medical profession has found a very happy working arrangement. If this will result in a group of highly trained specialists in the surgical field, the consultants will feel amply rewarded. Such a close joint effort will also give the members of the civilian medical profession a much clearer conception of the medical plans of the regular Army.

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ABSTRACT OF DISCUSSION

Col. Sam F. Seeley, M. C., U. S. A., San Antonio: It is evident from Dr. Stuck's presentation that the residency program of the Army is in a formative stage. We, of Brooke General Hospital, appreciate that modification will be required and the office of the Surgeon General is alert to the necessity of modifying the program in keeping with changes in graduate training.

The Army underwent a similar experience after World War I. At that time Medical Corps officers were sent to large clinics and teaching institutions for specialized training. Training was not in the form of postgraduate residency instruction. The present program is designed to meet the shortage of specialists in the service but has the added feature of paralleling residency programs in other institutions, thereby qualifying trainees under the requirements laid down by the Council on Medical Education of the American Medical Association and of the various specialty boards.

Our interest in graduate training is not confined

to the advantages gained by the military service. The standards of training in medicine throughout the United States serves as our measuring stick. Millions of veterans, as well as those on active duty, are entitled to the best care that medicine can offer. It is thus apparent that the treatment of this segment of the population is to be as good as for all others. In this way we of the Army and those of the civilian profession may take equal pride in the care given our citizens.

RECENT ADVANCES IN TREATMENT OF THE LEUKEMIAS AND THE LYMPHOMAS

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The effective therapeutic armamentarium used against the leukemias and the lymphomas has long been limited to the use of roentgen rays, administered either in the form of deep x-ray therapy or in the form of total body irradiation. Regardless of the exact technical procedure employed the results have invariably been only palliative and never curative, and the prognosis of a patient with one of these diseases has been altogether hopeless. It appears that external irradiation is not in any sense a definitive therapeutic agent in these conditions, and that a search elsewhere for more effective modes of treatment is mandatory if any hope of ultimate cure is to be extended to such patients. That this challenge has not been evaded is witnessed in the continued search for more effective therapeutic weapons by investigators and clinicians alike.

During the past few years two new groups of agents—the nitrogen mustards and radioactive phosphorus (P^{32})—have emerged to challenge the position of conventional roentgen therapy as applied to these neoplasms. It must be stated at the outset that neither of these newer agents has demonstrated ability to eradicate tumor growths, but their potentialities, particularly the potentialities of the nitrogen mustards, have not yet been fully delineated.

NITROGEN MUSTARDS

Research conducted during World War I revealed that in addition to its well known vesicant action, mustard gas produced suppressive effects on hematopoiesis and on the growth of experimental tumors in laboratory animals. However, few further observations were made until the advent of World War II, when interest in the activities of mustard gas and related compounds was again strongly stimulated. Under the guidance of various agencies of the United States Army, the Office of Scientific Research and Development, and the National Research Council, a considerable amount of data have been accumulated, much of which is still classified as "confidential" and consequently has not been published in the open medical press. The actions of mustard gas and the related nitrogen mustards has recently been reviewed by Gilman and Philips.[1]

Mustard gas or sulfur mustard has the following formula:

$$S \begin{matrix} CH_2—CH_2Cl \\ CH_2—CH_2Cl \end{matrix}$$

By substituting a nitrogen atom in place of sulfur, the basic formula of the nitrogen mustards is derived:

$$—N \begin{matrix} CH_2—CH_2Cl \\ CH_2—CH_2Cl \end{matrix}$$

Since nitrogen has a valence of three, a third radical can be added to the two chloroethyl radicals. If a methyl radical is employed, the resulting compound is bis-beta-chloroethyl methyl amine, which has received a rather wide clinical application. Instead of the methyl radical, a third chloroethyl root may be substituted and this compound is termed tris-beta chloroethyl amine. By such substitutions of radicals, an almost unlimited variety of nitrogen mustards can be synthesized. At present clinical experiences have been limited mostly to the bis- and tris- forms of the nitrogen mustards.

Both sulfur mustard and the nitrogen mustards exert on tissues a powerful cytotoxic effect, which is unlike that produced by any other known chemical agent but which does resemble the destructive effect of roentgen rays. Vacuolization of cytoplasm, swelling and fragmentation of nuclei, and cessation of mitotic activity are observed histologically within twenty-four hours following parenteral administration, and eventual recovery ensues if the dosage has been sublethal. The susceptibility of the various tissues apparently depends upon the rate of cell proliferation within those tissues, the most actively growing tissues demonstrating the greatest cytotoxic effect. It is not entirely clear how the mustard chemicals exert their destructive action. It is known that the sulfur

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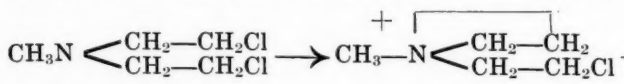
The Merck Laboratories, Rahway, N. J., in cooperation with the National Research Council, supplied the bis-beta-chloroethyl methyl amine hydrochloride used in the reported cases.

mustards and the nitrogen mustards ionize readily in body fluids to produce a cystic type of organic cation, as depicted below:



This organic cation is highly reactive and will combine with a number of constituents of normal cells. It is entirely possible that the cytotoxic effect may be the result of suppressing the activity of some unidentified enzyme system within living cells. In experimental animals and in human subjects, the hematopoietic tissues of the bone marrow and lymphatic system have proved especially vulnerable, a fact which has suggested the clinical application of these agents in neoplasms of the bone marrow and lymphatic system.

It must be remembered that only a few reports of clinical trials are available and that my own experience is far too limited to permit far reaching conclusions. Only the clinical potentialities as well as certain limitations of the nitrogen mustards can be indicated in this preliminary report.

The largest clinical application of the nitrogen mustards reported to date is that of Goodman and others.[2] In their series of 27 patients with Hodgkin's disease, many of whom were far advanced and in the roentgen ray resistant phase of their illness, some benefit was obtained in nearly every case. At times the improvement was dramatic, and in at least 3 patients sensitivity to roentgen irradiation was apparently restored following the course of nitrogen mustard therapy. Clinical improvement was measured by the complete disappearance or marked reduction in size of tumor masses, disappearance of fever, improvement in strength and appetite, and gain in weight. The remissions following treatment in these cases lasted from two weeks to seven months, whereas Jacobson, Spurr, Smith, and Dick[3] reported clinical remissions of from one to ten months in an unspecified number of treated cases.

CASE REPORTS

CASE 1.—One of our patients, a 33-year-old white man, presented himself with the chief complaint of swollen right cervical lymph nodes of seven months duration. Otherwise he had no particular complaints or physical findings. A gland biopsy was performed and a diagnosis of Hodgkin's disease established. Nitrogen mustard (bis-chloroethyl methyl amine) was administered, and by the end of the four day course of injections, the enlarged nodes had entirely disappeared. The patient has had no recurrence of the swellings during a ten month period of observation.

CASE 2.—Another white male patient of 37 years had multiple involvement of the thoracic and lumbar spine by Hodgkin's lymphoma. Several courses of roentgen therapy had not been particularly efficacious in controlling the symptoms of intractable back pain. For one month following the administration of the nitrogen mustards, complete relief of the pain was experienced, but it has since returned as severely as previously.

Goodman and his co-workers have published their experiences in the treatment of 13 patients with lymphosarcoma. Of this group 9 were considered to be in the advanced stage of the disease and most of them had reached the roentgen-ray resistant stage. Eight of the 13 patients were markedly improved following nitrogen mustard therapy for periods up to several months. However, 5 complete failures occurred and the authors concluded that they could not predict which patient might be expected to have a satisfactory result. Remissions lasting as long as ten months have been reported by Jacobson and his co-authors in their cases of lymphosarcoma.

The results of treatment in the chronic leukemias have been generally disappointing. Of 12 patients studied by Goodman and his coworkers[2] only 6 have had satisfactory clinical and hematological responses. Jacobson[3] has reported remissions of from zero to three months duration in his treated cases of chronic myelogenous leukemia, whereas patients afflicted with chronic lymphogenous leukemia were benefited for significantly longer periods of time, from three to twelve months.

CASE 3.—A 31-year-old Negro woman entered the hospital because of excessive vaginal and nasal bleeding. A physical examination revealed little beside marked pallor. The spleen and lymph nodes were not significantly enlarged. Laboratory studies revealed 3 Gm. of hemoglobin per 100 cc. of blood, and 800,000 erythrocytes, 31,000 thrombocytes, and 336,000 leukocytes per cubic millimeter. The differential formula and bone marrow studies were entirely compatible with a diagnosis of chronic myelogenous leukemia and secondary thrombocytopenic purpura. Within a period of seven days following the inception of nitrogen mustard therapy, the leukocyte count had fallen to 6,000 and immature granulocytes had entirely disappeared from the peripheral blood. The bleeding tendency was also ameliorated, and platelets showed a moderate rise to 85,000 per cubic millimeter. The leukocyte values remained within normal limits for a period of one month. At present (six weeks after treatment) the leukocyte count is 19,000 and a few myelocytes have reappeared in the peripheral blood. To date there has been no return of the bleeding tendency.

CASE 4.—A second patient was a 56-year-old white man who had received no previous therapy of any type. He was markedly pale and had a greatly enlarged spleen. The initial blood values were 7.5 Gm. of hemoglobin per 100 cc., with 3,000,000 erythrocytes per cubic millimeter and a total leukocyte count of 195,000 cells per cubic millimeter. The differential count was compatible with the diagnosis of chronic myelogenous leukemia. Following the

four-day course of nitrogen mustard treatment the total circulating leukocytes decreased to 93,000 cells per cubic millimeter, at which level they have remained for a two-months' period. There has been no perceptible change in the hemoglobin or erythrocyte levels and no appreciable shrinkage of the spleen. Yet the patient maintains that he feels improved. It is entirely possible that a second course of nitrogen mustard might produce a more complete remission in this case, and at present we are contemplating such a procedure.

In the treatment of the acute leukemias the nitrogen mustards have been of no value.

It is apparent that the present nitrogen mustard compounds are in no way cure-alls for leukemia and the lymphomas. At best they have produced clinical remissions comparable with those encountered following roentgen ray administration. At worst they have failed completely and on occasion unpredictably. Although the most obvious value of the nitrogen mustards is the ability to produce further clinical remissions when irradiation has lost its effectiveness, it must be remembered that the surface of research in these compounds has been barely scratched and it is entirely feasible that newer members of the nitrogen mustard family will demonstrate an increased range of efficacy and a greater consistency of action.

RADIOACTIVE PHOSPHORUS (P^{32})

One of the important limiting factors in roentgen ray treatment of leukemia and lymphomas is the vulnerability of the skin to the effects of irradiation. It has long been hoped that more effective irradiation of deep tissues might be possible if the percutaneous route of administration could be supplanted by some form of internal irradiation. Radioactive phosphorus (P^{32}), which can be administered either intravenously or orally in the form of dibasic sodium phosphate, effectively circumvents the necessity of undue skin exposure. However, its clinical application is limited by the appearance of leukopenia, thrombocytopenia, and/or anemia as evidence of suppressed hematopoietic activity.

Clinical data accumulated over the past ten years have been summarized in the excellent review article of Reinhard, Moore, Bierbaum, and Moore.[4] Time does not permit a detailed discussion of the uses of radiophosporus. However, this agent appears to be as effective as roentgen therapy in the treatment of chronic myelogenous leukemia, whereas it is somewhat less effective in the treatment of chronic lymphatic leukemia and is without beneficial effect in the acute leukemias and in monocytic leukemia. Radioactive phosphorus is definitely inferior to roentgen therapy in the treatment of Hodgkin's disease, and complete clinical remissions are for the most part unattainable even when doses large enough to damage the bone marrow and lymphatic system have been administered.

However, the use of radioactive phosphorus is not to be decried in spite of its disappointingly limited effectiveness. Where it is properly used, clinical improvement is clearly discerned. The administration of the radioactive material is technically simple and is attended by no such irradiation sickness as is so commonly encountered following roentgen therapy.

It is to be hoped that neither the nitrogen mustards nor radioactive phosphorus represents the last therapeutic discovery pertaining to leukemia and the lymphomas. The challenge of finding a truly curative agent still exists. Yet the search may be made a little easier because of the guidance afforded by these new agents.

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ABSTRACT OF DISCUSSION

Dr. William L. Marr, Galveston: Dr. Hettig is to be congratulated for this timely paper. The need is great for improvement in the methods of treatment of these incurable diseases. As the author emphasizes, the nitrogen mustards and radioactive phosphorus are not "cure-alls" for the lymphomas or leukemias. However, clinical trials demonstrate that these new drugs can and do exert definite symptomatic benefit in a substantial percentage of cases. Particularly, it seems that the nitrogen mustards symptomatically improve many cases of Hodgkin's disease and lymphosarcoma that roentgen ray has failed to help or that had already become roentgen ray resistant.

That an up-to-date report on these new drugs was needed is evidenced by the fact that already the lay press-educated patients are requesting, and at times demanding, the use of these drugs with the erroneous viewpoint that something more than symptomatic relief may be anticipated. Dr. Hettig, in expressing the view that further research with the nitrogen mustards and radioactive phosphorus may point the way for better understanding and eventually a cure for these malignancies, should keep our attention focused on this work in the ensuing years.

Dr. M. D. Levy, Houston: The more or less hopeless outlook in the treatment of the leukemias and lymphomas causes us to look with hope to the introduction of any substance that promises help. Dr. Hettig's sane and lucid survey of the nitrogen mustards and radioactive phosphorus, with the cases he has reported, serves to keep us from being overly enthusiastic about the results to be expected from these new aids.

To date, the experience of workers with these substances convinces us that little has been added to

the old methods of treatment as far as life expectancy is concerned. No outstanding improvement over the use of roentgen rays has been noted, for example, in Hodgkin's disease. However, in cases that have become radioresistant, the mustards have been observed to institute a remission of the disease, reducing the temperature to normal, and also causing the cases to be radiosensitive again. This property of the mustards makes them a greatly valued addition in the fight to prolong the life of such patients.

Experience with the mustards is so new and limited that it is impossible to draw any well-formed conclusions as to their value. It was not until the chemists had produced many new sulfa compounds that the real value of the new agents was realized. With the nitrogen mustards, as Dr. Hettig has mentioned, any number of new compounds are possible of manufacture by a rearrangement of the amine group, and it is permissible to look with hope to that time when a potent compound capable not only of arresting these diseases, but of permanently curing them, will result from the work of the biochemists.

SODIUM CITRATE IN TREATMENT OF LEAD ENCEPHALOPATHY

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The clinical picture of lead poisoning in children differs considerably from that encountered in adults. Involvement of the central nervous system or encephalopathy, which is rarely seen in adults, is common in children; and at least one-half of affected infants and young children have encephalitic manifestations. The mortality in this group is about 25 per cent.[1]

The fundamental structural disturbance in the central nervous system is the intense edema. Other histologic changes are endothelial hyperplasia in the smaller blood vessels and hyperplastic changes in the leptomeninges. Ischemic alterations in the parenchyma of the brain may result from the former, and hydrocephalus may result from the latter. It should be stressed that the types of structural abnormalities found at autopsy vary much, depending upon the duration of the intoxication before death occurs.[2]

The symptoms and signs of lead encephalopathy are essentially those which are characteristic of increased intracranial pressure. Vomiting is an early symptom. There are apt to be muscular incoordination, hypertension, bradycardia, a cracked pot sound on tapping the skull, convulsions, and edema of the optic nerve. There may be many other manifestations, such as weakness, irritability, loss of weight, pallor, abdominal pain, loss of appetite, and insomnia. Peripheral motor paralysis may occur, but this is much less common in children than in adults. The abdominal colic which is so common in adults is relatively infrequent in children although in acute poisoning severe gastro-intestinal symptoms may occur. A lead line in the gums is not often found in children.

Although the signs and symptoms may be suggestive, the diagnosis of lead encephalopathy is confirmed by laboratory findings. In children, very helpful is the roentgenographic evidence of the deposition of lead at the growing ends of the shafts of the long bones, although under certain conditions, such as in the presence of rickets or hypothyroidism, this condition may be absent. The presence of basophilic stippling in the red blood cells (over 2 per cent) may offer some confirmatory evidence. Finally, an excessive concentration of lead in the urine or blood is the most conclusive evidence of intoxication. Most authorities agree that values of over 0.1 mg. per liter of urine indicate excessive exposure and absorption of lead although definite symptoms may not necessarily be present. This urinary value occurs when the blood level is 0.06 to 0.07 mg. per 100 cc. The spinal fluid, in the presence of encephalopathy, shows marked increase in pressure, possibly increased amounts of protein, slight pleocytosis, and a normal sugar.

It is usually stated that of those who recover from the acute encephalitic phase, at least one-third are left with permanent neurologic sequelae. Actually, in children the ultimate damage may be even greater. Byers and Lord[4] reported a follow-up study on 20 school children who had been hospitalized in infancy or early childhood because of lead poisoning. None of them had had severe symptoms of lead encephalopathy and all were judged to have made complete recovery at the time of discharge from the original hospitalization. Of these 20 children, only 1 had progressed satisfactorily in school. These findings suggested to the authors that even mild poisoning might have serious effects on the growth and development of the infantile nervous system.

TREATMENT

There are numerous reports in the literature dealing with the treatment of lead poisoning. In relieving the acute symptoms of lead intoxication, measures have usually been recommended which tend to hasten the removal of lead from the circulation by aiding deposition of the metal in the bones. Aub and his co-workers[3] have pointed out that lead in the body is absorbed, transported, deposited, and excreted much as is calcium, so that in general, factors which influence calcium metabolism might also be expected to have an influence on lead. To favor the stor-

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Read before the Section on Pediatrics, State Medical Association of Texas, Annual Session, Dallas, May 7, 1947.

age and immobilization of lead, a positive calcium balance was recommended. Later investigators[6] emphasized the necessity of a high intake of phosphorus together with large doses of vitamin D. Unfortunately, the efficacy of these therapeutic measures has been difficult to evaluate. Some workers have advised removal of the lead from the bone later by means of a diet low in calcium and high in phosphorus, acid forming salts, or parathyroid extract, but it has been shown that such procedures may be dangerous as recurrence of cerebral symptoms may result from the deleading process.

Kety[8] in 1941 suggested a form of treatment by which insoluble lead compounds of the body tissues might be dissolved, thereby making more lead available for excretion, yet not increasing the ionic concentration. A survey of the solubility of lead phosphate in dilute solutions of various organic ions disclosed that citrate in very dilute solutions by forming a complex ion with lead had a powerful solvent action on the insoluble lead phosphate.

The first clinical report of citrate as a therapeutic agent was published in 1941 by Kety and Letonoff.[9] They found a rapid disappearance of toxic symptoms without untoward reactions in 6 patients with mild to severe lead intoxication. All patients had abnormally high lead concentrations in the whole blood on admission, and the values fell to normal or nearly normal levels after institution of this treatment. Urinary excretion studies indicated a trend toward increased output of lead during this regime. In 1943, these same authors[10] further reported the results of sodium citrate treatment of 15 patients, all adults, none of whom had encephalitic symptoms. This agent was remarkably effective in relieving symptoms such as lead colic. There was a marked fall in blood lead concentration in every patient, so that after twenty days of citrate therapy there was no value over 0.1 mg. per 100 cc. The dosage used was 4 or 5 Gm. of sodium citrate dissolved in 1 ounce of water three or four times daily. No reactions attributable either to sodium citrate or to lead were observed during the entire experience with this treatment. There were no symptoms of alkalosis and there were no significant changes in the alkali reserve or total base of the blood. No patient experienced a recurrence or aggravation of the symptoms of lead poisoning while receiving citrate therapy, whereas the occasional appearance of such reactions is alleged to be a danger in the previously mentioned deleading methods. Studies were made of changes in certain blood constituents, including calcium and phosphorus, before and during ingestion of sodium citrate, but no consistent changes were observed.

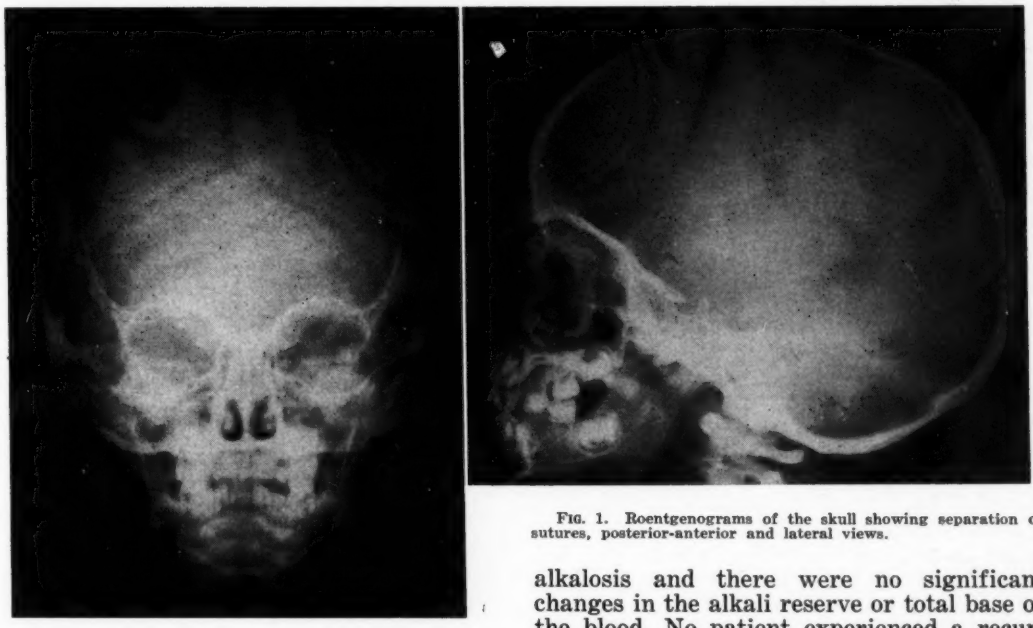

FIG. 1. Roentgenograms of the skull showing separation of sutures, posterior-anterior and lateral views.

Letonoff and Kety[11] subsequently described the effect of sodium citrate on the excretion of lead in the urine and feces and found that the lead lost by increased excretion in urine and feces greatly exceeded the amount disappearing from the circulation. They also

found no change in the excretion of calcium and phosphorus in the urine and feces during citrate administration.

Insofar as we have been able to determine, the only report found in the literature wherein sodium citrate has been used in the treatment of a patient with encephalopathy is that by Gedgoud[5] in 1946. He reported that a 12 month old infant with definite symptoms of encephalopathy responded remarkably to sodium citrate, 0.5 Gm. five times daily.

In regard to the treatment of the encephalitic symptoms specifically, it is also advisable to use sedatives to control convulsions and parenteral hypertonic solutions to aid in relieving cerebral edema. Magnesium sulfate intramuscularly has been recommended by several authors. When there is greatly increased intracranial pressure, surgical decompression may also be indicated in an attempt to avoid such serious residuals as blindness and mental deficiency.[7]

FIG. 2. Roentgenograms of the upper and lower extremities showing deposition of lead at the ends of the shafts of the long bones.

The purpose of this article is to report my experience with a 2 year old child with lead encephalopathy in whom citrate therapy was used and in whom after three months, evidence of neurologic sequelae existed.

CASE REPORT

J. M. S., a 2 year old white girl, was admitted to the Children's Hospital of the University of Texas on December 13, 1946, because of vomiting of five weeks' duration. The vomiting, which was projectile, became more persistent, and the child became drowsy about four days before admission. There had been no associated fever, diarrhea, or other symptoms of infection. On the second day of hospitalization, further interrogation of the mother revealed a history of pica. The child habitually chewed pencil erasers, and it was further learned that she had consumed paint which had peeled from the house.

Physical examination revealed an acutely ill, semicomatose child who could be aroused only by painful stimuli. The occipitofrontal head circumference was 47.1 cm. (18.5 inches), which is well within normal limits. A definite cracked pot sound was elicited on tapping the skull, and the fundus examination revealed definite papilledema. Blood pressure was 154 systolic and 80 diastolic. The pulse was only 84 per minute, and the temperature was 98.6 F. There was suggestive rigidity of the neck and back.

On admission a lumbar spinal tap was done. The spinal fluid rose to 600 mm. (with the child sleeping). Only the spinal fluid in the manometer was removed for examination. This fluid was clear, and the cell count was only 4 per cubic millimeter.

On the second day of hospitalization, spasticity of all extremities was noted, and a bilateral Babinski's sign was present. The child had a convulsion, for the first time, on this day. The twitchings were localized largely in the right upper and lower extremities. The neurosurgical consultant examined the patient and advised exploratory craniotomy because of the evidence of marked increase in intracranial pressure. Bilateral frontal openings were made, and marked herniation of the cortex through the small dural openings was noted. Bilateral ventricular punctures were made, and the ventricles were found to be small. It was believed that no tumor or abscess was present.

Roentgenograms of the skull (fig. 1) showed separation of the sutures of the skull. Subsequent study of the long bones two days later revealed heavy bands of greatly increased density at the growing ends (fig. 2).

Admission blood studies showed 3,610,000 erythrocytes, 9.8 Gm. of hemoglobin, and 22,250 leukocytes with a differential of 85 per cent polymorphonuclears and 15 per cent lymphocytes. A count on December 18 revealed 4.8 per cent basophilic stippling. The blood Kahn test was negative. A bone marrow biopsy from the right tibia on December 19 was found to be essentially normal by the hematologic consultant.

During the first few days after admission, treatment in addition to the surgical decompression consisted of sedation with phenobarbital, magnesium sulfate given by rectum, and restriction of fluids. Three days after admission (December 16), it was decided to administer sodium citrate. One Gm. dis-

solved in 100 cc. of water was given by stomach tube every eight hours. Before this drug was started, however, the general condition of the patient had improved. There had been no further convulsions since the second day of hospitalization. After starting the citrate, it appeared to the various staff members that improvement was accelerated. By December 21 the child seemed more alert and was actually sitting up in bed. The papilledema had completely disappeared by December 31, but it was obvious that vision was practically gone. It was believed the patient could distinguish light from darkness.

Sodium citrate (3 Gm. per day and later 2 Gm. per day) was given continuously from December 16 until discharge on February 14, 1947, except for a three day period beginning January 17, on which date the child vomited several times.

Three determinations of the urinary lead concentrations after the citrate therapy was started were made by Dr. A. A. Ormsby of the Department of Biological Chemistry. The results were as follows: 4.0 mg. per 1,000 cc. on January 2; 0.8 mg. per 1,000 cc. on January 15; and 0.2 mg. per 1,000 cc. on February 11. Samples of house paint brought by the mother of the patient were found to contain large amounts of lead.

No abnormality in the carbon dioxide combining power of the blood was found, nor were other laboratory studies significant. On February 6, while citrate therapy was in progress, the serum calcium was 11 mg. per 100 cc.; phosphorus 5.05 mg.; and phosphatase 5.89 Bodansky units.

At the time of discharge (February 14), the child was having temper tantrums. Our ophthalmologic consultant had reported optic atrophy on the right and paresis of the third cranial nerve (portions to the superior levator of the right upper lid and the right medial rectus muscle) and these findings were still present at discharge. Otherwise, the child seemed normal. She walked around the wards and played with the other children. Follow up in the dispensary one month after discharge revealed no improvement in vision although the child seemed to be adjusting to this handicap, according to the mother.

SUMMARY AND CONCLUSIONS

Although no dramatic results are claimed to have occurred in the treatment of this patient with sodium citrate, it was believed that the addition of this salt resulted in considerable clinical improvement after the other emergency measures had been carried out. The final results of the disease in this patient cannot be determined for several months or years. It is expected, however, that in all probability the child will remain partially blind.

The clinical picture of lead poisoning in infants and young children is typically that of an encephalopathy, and the predominant symptoms are due to increased intracranial pressure. The prognosis has on the whole been poor because of the residual neurologic and mental changes.

The treatment of lead intoxication by the administration of sodium citrate has been discussed. This type of therapy would seem to be the most satisfactory of any treatment used to date. My experience in the treatment of a 2 year old child lends support to the idea that it deserves further clinical trial in the treatment of children with this disorder.

Regardless of what therapy is employed for the treatment of lead intoxication, patients with evidence of marked increased intracranial pressure should probably have surgical decompression as an emergency measure.

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ABSTRACT OF DISCUSSION

Dr. George Salmon, Houston: Has BAL been found to be useful in lead poisoning?

Dr. Wilkinson, closing: In experimental animals, it has been reported that BAL does no good in lead poisoning. So far as we know, it has not been used in human beings with lead intoxication.

NAVY TRAINS FOR RADIOLOGIC SAFETY

The Navy is carrying out research and training personnel in the field of radiologic safety, the June 14 issue of *The Journal of the American Medical Association* reports.

In December, 1946, a six weeks intensive course in radiologic safety for medical officers was conducted at four locations to train key personnel for use in the indoctrination of additional personnel. Several of those who received the basic training are now receiving advanced training in radiation physics and chemistry, radiologic safety, nuclear physics, and allied sciences in civilian institutions. A number of trained navy medical officers are now being used as instructors at the radiologic safety school for line officers conducted at Treasure Island, Calif. Laboratories have been established in several localities to develop methods for the prevention of radiation injury to those who are making a study of the target vessels used in the Bikini bomb tests. At the Naval Medical Research Institute, Bethesda, Md., studies are being conducted concerning the biologic effects of radiation on the laboratory animals employed in the tests.

The Bureau of Medicine and Surgery is now preparing a manual on radiologic safety for all medical officers (including reserve officers on active and inactive duty), nurses, and hospital corps personnel. This manual will contain basic information on nuclear physics and on certain medical aspects of atomic energy. Those who show interest and aptitude in this specialized field will be given advanced, personalized instruction.

LOFFLER'S SYNDROME

Report of a Case in an Infant

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Fifteen years have elapsed since Löffler described the symptom complex which bears his name. In 1940, when the following case was observed, about 100 cases had been reported; 51 of these were included in Löffler's[6] series of 1936, and few cases were to be found reported in American Literature. Since that time numerous reports have added to knowledge of the condition and the only reason for recording an additional case is that it is one of the very few reported in infants.

The disease is characterized roentgenologically by a succession of transitory shadows which may appear in any part of the lung fields, be widespread and homogenous, spotted or cloudy, more or less sharply defined, may resemble tuberculosis or bronchopneumonia, and ordinarily do not remain in one spot for more than two weeks. As one shadow disappears, others may appear in different parts of the lung parenchyma. It is necessary to have serial roentgenograms made to be certain of the diagnosis.

The other characteristic finding is the blood eosinophilia, which varies from 8 or 9 to as much as 70 per cent. This eosinophilia may be present before the roentgen changes or may not appear until they are well established. It may disappear with the clearing of the pulmonary infiltrations or it may persist for some time after the disappearance of the infiltrations. The majority of Löffler's patients had some rise in temperature, seldom more than to 101 F. Other observers report cases in which there was an acute febrile reaction, some cough, and occasionally symptoms of pleurisy. Physical findings are generally completely absent, and even at the height of the infiltrative process there may be no rales, changes in breath sounds, or alterations in resonance.

It is now rather generally agreed that the condition is an allergic phenomenon and may be produced by many different allergens. Several cases have had a concomitant ascariasis. Many cases apparently are due to pollen sensitivity, and some of the earliest cases reported by Engel[3] in Shanghai attributed the condition to sensitivity to Ligustrum. One case reported was apparently due to amebiasis in which the infiltrations and eosinophilia disappeared under emetine treatment. It is likely that at times bacterial and viral sensitivity may be etiologic factors.

Read before the Section on Pediatrics, State Medical Association of Texas, Annual Session, Dallas, May 6 1947.

Because the syndrome is benign, the opportunity for pathologic investigation has been limited. Von Meyenburg[7] reported autopsies on 4 persons, 3 of whom had died while in military service; the fourth was a victim of tetanus. Macroscopically the lesion may resemble bronchopneumonia or infarctions. A serous exudate composed of from 70 to 100 per cent eosinophilic cells was regularly found in the alveoli. In 2 of the cases eosinophilic bronchitis and bronchiolitis were present, and in 2 the bronchi were free. Giant cells and Charcot-Leyden crystals were found both in the lungs and interstitial connective tissue of the liver. There was marked perivascular accumulations of leukocytes, mostly eosinophilic. Two of the persons had ascarids in the intestines. All of them had an increase of eosinophils in the bone marrow. Vascular changes consisting of hypertrophy of the media and thickening of the intima of the arterioles and small and medium sized arteries, accompanied by necrotizing arteritis and arteriolitis, was described by Baggenstoss and associates.[1] They noted that these changes are quite similar to those observed in periarteritis nodosa. Harkavy[4] noted essentially the same vascular changes in 4 cases of severe bronchial asthma of long duration that came to autopsy. He stated that the advanced organization of the pneumonic exudate and the granulomatous character of the focal lesions constitute overwhelming evidence that the pulmonary lesions are not transitory in all cases. Hennell and Sussman,[5] in discussing roentgen findings, stated that complete resolution usually takes place, but a few linear strands may remain.

TABLE 1.—*Blood Count of an Infant with Löffler's Syndrome.*

Date 1940-1941	Red Blood Cells	Hemoglobin %	White Blood Cells	Neutrophils	Lymphocytes	Eosinophils
Aug. 29	3,690,000	74	7,200	28	58	6
Oct. 8	1,910,000	42	6,850	14.5	76	8
Oct. 9	2,140,000	38	4,500	14	71	12
Oct. 11	3,450,000	75	4,600	14	71	15
Oct. 13	4,110,000	90	3,800	12	57	31
Oct. 16	4,060,000	88	3,200	22	55	23
Oct. 19	3,740,000	80	1,850	10	45	45
Oct. 22	4,430,000	93	2,300	31	38	31
Oct. 25	4,420,000	90	3,300	60	14	16
Oct. 29	3,880,000	75	4,800	43	7	50
Nov. 1	3,250,000	70	4,500	32	25	43
Nov. 4	4,610,000	90	5,900	50	32	28
Nov. 8	4,100,000	85	7,600	33	28	39
Nov. 15	4,210,000	82	13,400	30	47	18
Nov. 22	4,570,000	85	7,750	53	32	10
Dec. 9	3,540,000	85	14,250	38	55	5
Jan. 1	4,850,000	90	14,700	47	49	4
Jan. 20	4,700,000	90	10,000	42	50	7
Mar. 1	4,420,000	85	11,000	37	50	13

CASE REPORT

CASE 1.—A girl, age 5 months, was seen July 22, 1940, because of a gastro-intestinal allergy.

Family History—One sister, age 2 years, was always well. The father, a physician, suffered from severe seasonal and perennial hay fever. The maternal grandmother and the mother had both had bronchial asthma.

Past History—Following a normal delivery, the patient was put on an evaporated milk formula during the first week and developed a bloody diarrhea. During the next four months, she had seventeen formula changes and almost continuous colic. The weight gain was poor. Orange juice was vomited and precipitated a diarrhea. She vomited Sobee. She was able to take one teaspoonful of Pablum daily, but if this amount was exceeded, there was an increase in abdominal pain and in the number of stools.

Physical examination, with the exception of a bluish red, beefy appearing tongue, was negative. The urine was normal. The blood count August 29 was as follows: red blood cells, 3,690,000; white blood cells, 7,200; hemoglobin 74 per cent; eosinophils 6; lymphocites 58; neutrophils 36. A stool examination was negative for ova and parasites.

Goat's milk was given and tolerated for a period of two and one-half months. During this time numerous attempts were made to add different vegetables, fruits, and grains to her diet, but with the exception of oatmeal, all foods tried precipitated a bloody diarrhea. Each attack of diarrhea was preceded and accompanied by an intense bluish red discoloration of the tongue and abdominal pain. Ascorbic acid, Drysdol, and yeast extract were tolerated.

On this restricted diet the infant was colic free, except when new foods were being tried, until September 28, when she refused goat's milk and devel-

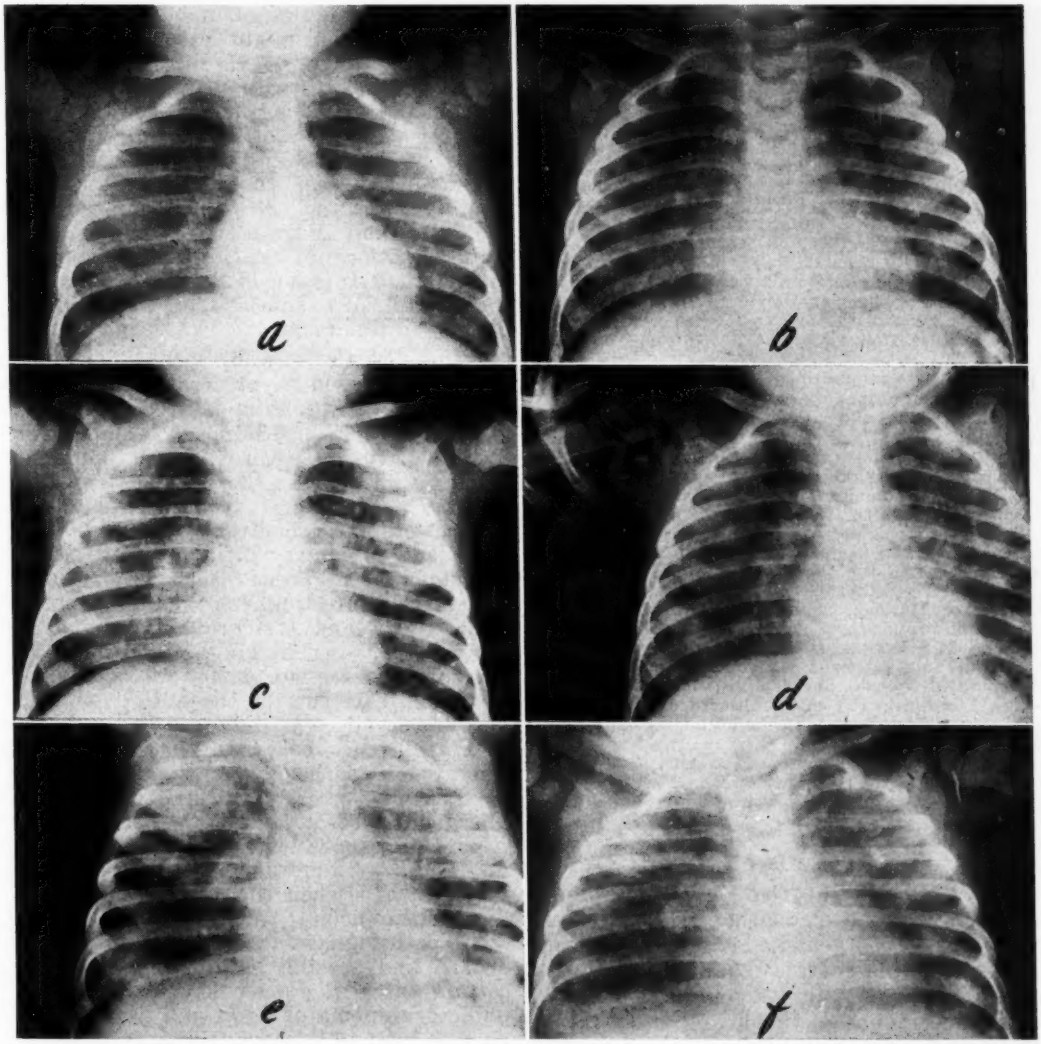

FIG. 1.—Roentgenograms taken at intervals to show the course of Löffler's syndrome in an infant girl (case 1). Changes in the location and intensity of pulmonary infiltrations may be seen. (*a*) October 9, 1940, white blood cells 4,500, eosinophils 12 per cent; (*b*) October 13, white blood cells 3,800, eosinophils 31 per cent; (*c*) October 23, white blood cells 2,300, eosinophils 31 per cent; (*d*) October 24, white blood cells 3,300, eosinophils 16 per cent; (*e*) October 28, white blood cells, 4,800 eosinophils 50 per cent; (*f*) November 6, white blood cells 7,600, eosinophils 39 per cent.

oped a diarrhea. She was seen October 8, at which time she had a temperature of 101 F. and a mild diarrhea. A physical examination was essentially negative. The blood count was as follows: red blood cells, 1,910,000; white blood cells 6,850; hemoglobin, 42 per cent; neutrophils 14; lymphocytes 76; eosinophils 8.

The patient was hospitalized. A roentgenogram revealed what appeared to be a rather widespread bilateral bronchopneumonia. Although pulmonary infiltrations were present for the next ten weeks, at no time were there any rales, changes in breath sounds, or percussion changes.

Roentgenograms taken at frequent intervals revealed definite changes in the location and intensity of the infiltrations (fig. 1). It was believed that the severe anemia on admission was nutritional in origin although the rapid drop in both red cells and hemoglobin between August 29 and October 8, during which time her diet consisted largely of goat's milk, suggested the possibility of a so-called goat's milk anemia. Erythrocyte and hemoglobin response to transfusion was excellent.

During the period of acute illness the leukocyte count varied from a low of 1,700 to a high of 7,600 and the neutrophils from 10 to 76 per cent. The eosinophil percentage varied between 8 and 50 and was 30 or more on eighteen different days.

Clinically the patient was apathetic, moderately dyspneic, and at times slightly cyanotic. Response to sulfathiazole and sulfapyridine was unsatisfactory, and it was October 29 before her temperature had returned to normal.

Cow's milk and goat's milk were vomited, Mul Soy was retained when administered by gavage, and later was taken with eagerness for a period of two years. Since that time, the patient has tolerated cow's milk.

Laboratory examinations included the following:

Stool examinations were negative for pathogenic organisms, ova, and parasites upon seven different occasions.

Agglutination tests and blood cultures were negative. Stomach washings were negative for acid-fast bacilli on two occasions. Nasal smears contained 90 per cent eosinophils. The urine was normal. Red blood cell fragility was normal. The sedimentation rate varied from 5 to 9 mm. per hour. Blood chemistry studies revealed the following constituents per 100 cc. of blood: calcium 9.8 mg., phosphorus 5.06 mg., cholesterol 214 mg., sugar 105 mg., chlorides 410 mg., total protein 5.85 mg., albumin 3.73 mg., and globulin 2.12 mg. A sternal puncture revealed an essentially normal bone marrow. The myelogram was studied by two pathologists, neither of whom believed there was any essential increase in the eosinophils in the marrow. Tuberculin skin tests were negative.

Since October, 1940, with the exception of an occasional attack of asthma, the general health of the patient has been good. Growth and development has been normal, and apparently she has no food allergies.

COMMENT

The diagnosis of Löffler's syndrome would ordinarily be suggested either by discovering unexplained roentgen shadows or by a blood eosinophilia in a routine examination. Eosinophilia is present in eosinophilic leukemia, familial eosinophilia, various metazoal parasitic infestations, many skin diseases, Hodgkins disease, malignant tumors, convalescence after infectious diseases, and tropical eosinophilia. It is also present in allergic diseases in which the allergen may be any inhalent, any food, or any drug, and may be administered enterally, parenterally, by inhalation, or by contact.

The origin and functions of eosinophilic leukocytes is still a controversial question. While there is no doubt that they are formed in the bone marrow, there is some evidence that under certain conditions they may be formed in the tissues. It seems likely that they are concerned with protein metabolism and with the liberation of histamine from the cells. Because they are definitely increased in the shock tissues, the secretions, and at times in the blood in allergic reactions, understanding of their function in cellular metabolism might lessen the confusion concerning allergy. In the case presented there was no increase in eosinophils in the bone marrow. This is not in accordance with other reports on Löffler's syndrome where marrow studies were made. Serial myelograms in this case would have been valuable, and had they, too, shown no increase in eosinophils, their extra-marrow origin in certain conditions, at least in infants, could not be doubted. It is hoped that if a similar case presents itself to someone, it be studied thoroughly in this respect.

While Löffler's syndrome as defined by Löffler is a benign process, recurring pulmonary infiltrations and blood eosinophilia of many years' duration have been described by Harkavy[4] in severe asthma apparently bacterial in origin. Bergstrand[2] from clinical and pathologic study of 4 patients with severe asthmatic conditions, all of whom had transient pulmonary infiltrations and blood eosinophilia, regarded "such syndromes as rheumatic infection, periarteritis nodosa, endo-, myo- and pericarditis, rheumatic in origin and transient lung infiltrations with eosinophilia as morphological equivalents, i.e., manifestations of the antigen-antibody reaction localized to different organs." His conclusions are based on the similarity in microscopic pathology in the above conditions, and he agrees with Harkavy that when allergic diseases are caused by bacterial antigens, the response is apt to be more severe and has a greater tendency to become irreversible than when the antigen is extrinsic and nonbacterial. Certainly there is adequate pathologic evidence that the above conditions and possibly rheumatic pneumonia, certain cases of glomerulonephritis, eosinophilic granuloma of bone, and lupus erythematosis may all be various manifestations of allergic reactions.

For years allergy has been the stepchild of medicine because clinically allergic thera-

peutic results have left much to be desired. Allergists have suffered through innumerable drug treatments, the endocrine and vitamin cures, the psychomatic approach, and now the histamine and antihistamine era. Fundamental physiologic, biochemical, and pathologic concepts of the allergic reaction have not been studied with the same diligence as pollen granules have been counted or house dust has been fractionated. Brilliant pathologic investigations and conclusions during the past few years have created new concepts of allergic diseases. These findings undoubtedly will help the physiologists and the biochemists in their investigations and eventually allergy will be on a sounder scientific basis.

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ABSTRACT OF DISCUSSION

Dr. Frances M. Love, Dallas: The case report of Dr. O'Byrne is well illustrated and timely. It has many features which clearly support the idea which has had considerable current interest and comment, that the clinical complex known as "Löffler's syndrome" is allergic in origin. His patient showed, in addition to the characteristic lung infiltrations reported by Löffler and others, further manifestions accepted as occurring on an allergic basis in the initial and concomitant bloody diarrhea and in the subsequent asthmatic attacks.

As mentioned by Dr. O'Byrne, Löffler's original concept of an acute and benign condition has gradually undergone modification. In the earlier literature there was also confusion between this probably unrelated condition and the transient lung infiltrations associated with tuberculosis which clear rapidly and are not associated with any marked increase in the patient's symptoms. In these latter cases there is usually no increase in the blood eosinophils. There now exist in the medical literature several reports of cases with fatal outcome, and also, in recent years, an increasing number of cases have been recognized in which clincal and accessory findings recur transiently many times or persist unchanged over long periods of time. The present case is of moderate duration, and, as pointed out by the author, is unusual in that it occurred in an infant whereas most reported cases are in older children or adults.

Dr. O'Byrne mentioned the pathologic changes reported in later cases which agreed closely with those found by von Meyenburg, and in addition the features which resemble the processes of the rheumatic state of periarteritis nodosa, also of uncertain etiology. These conditions have all been regarded as resulting from antigen-antibody reactions localized to different organs, with the clinical picture dependent upon the site of localization.

It would appear that we are on the verge of an era of expansion of the concept of allergy as the basis for many disease syndromes until now regarded as undetermined or mysterious in etiology. This is now mainly theoretical, but with more investigation, further documentation of evidence both clinical and experimental may be expected.

EARLY DIAGNOSIS OF CARCINOMA OF THE UTERUS—THE PHYSICIAN'S RESPONSIBILITY

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The diagnosis of malignant disease is a responsibility of the entire medical profession and not just those with special training and experience. It is a mutual, cooperative endeavor which can succeed only when interest and enthusiasm reaches each member of the profession. Comparative studies of the statistical reports from clinics treating carcinoma of the uterus reveal a relative fixation of the percentage of cures, (namely, carcinoma of the cervix, from 25 to 30 per cent; of the body of the uterus, from 45 to 51 per cent). There has been no improvement in this percentage during the last fifteen or twenty years; nor has there been a single "fundamental" change in the treatment.

CARCINOMA OF CERVIX

Victor Bonney advocated the radical operation (Wertheim) as the method of treatment of carcinoma of the uterine cervix when such cases fulfilled certain conditions. Yet he found that only 63 per cent of patients examined were operable. The percentage of cures from these selected groups was 23 per cent and the primary mortality 9.5 per cent. Meigs has recently revised this operative procedure, combined with various types of irradiation therapy, in the hope of obtaining a greater percentage of salvage. His series is too small and insufficient time has elapsed to yield valid conclusions. It is certain, however, that with sulfa drugs and penicillin available, the primary mortality will be lessened, but these factors will not yield percentage increases in the cured group unless the combinations are of real value. Such studies are valuable for broadening our knowledge of this disease. In contrast, the percentage of patients subjected to treatment in clinics using radium and roentgen ray varies between 90 and 96 per cent. The percentage of cures in those patients is slightly better than that obtained by the radical operation, allowing for the difference in primary mortalities (namely, 9.5 per cent

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in the operative group; 1 to 2 per cent in the group treated with irradiation).

Statistics have varied widely with respect to the occurrence of lymph-gland involvement in carcinoma of the cervix (Bonney 40 per cent, Taussig 29.35 per cent, Meigs 16 per cent). In spite of statements of some authors that the demonstration of carcinoma cells in the lymphatics means death within five years, such patients do occasionally survive; conversely, those seemingly free have succumbed to the disease. Nor is the occurrence of such gland involvement necessarily proportionate to the stage of local invasion. Glands have been found involved in very early cases, and in others rather far advanced the glands have been free. It is certainly true that patients with gland invasion have been cured by irradiation. It cannot be emphasized too strongly that patients submitted to surgery are selected and fall into the noninvasive groups 1 and 2 (Broders' classification), yet the number of patients surviving is no greater than that obtained in treating patients in all four classifications with radium and roentgen ray. Healy, reviewing his cases, stated that of those fulfilling the conditions necessary to indicate surgery and having been thoroughly treated by irradiation, 80 per cent could be cured. Strict analysis of cases treated by either method will reveal that almost all cures were obtained in grades 1 and 2. When the personal factors are sifted from these studies and the results are evaluated, it is clear that, so far as present knowledge goes, the best method of treatment of carcinoma of the uterine cervix is radium and roentgen ray. There are many methods of applying radium and all yield about the same results and do not differ in any fundamental. Whether roentgen ray is used first, followed by radium or vice-versa is not of material importance. The moderate dosage of both agents is recommended.

CARCINOMA OF BODY OF UTERUS

In contrast, studies of the results obtained in the treatment of carcinoma of the uterine endometrium have shown a slight, but steadily improving percentage of cures. In general, there is complete agreement that the best method of treatment is irradiation, followed by removal of the entire uterus and both tubes and ovaries and postoperative irradiation with roentgen ray. No attempt is made to remove the lymph glands of the pelvis.

Some variations in such treatment will necessarily occur. In some instances preliminary irradiation is questionable, if not contraindicated, where endometrial carcinoma is present in a uterus with pedunculated fibroids, subacute tubal disease, and adhesions of the loop of the bowel to such structures. It is my opinion that primary surgery should be instituted, followed by roentgen therapy. It is generally believed that irradiation alone is not sufficient for the cure of this disease, and should be relied upon only when there is absolute contraindication to radical surgery.

Taylor and Becker found the percentage of cures to be influenced by the gross extent of the carcinoma and measured by (1) the size of the uterus (Healy method), (2) the type of cells present, and (3) the therapy instituted, which deductions lead again to the conclusion that the only hope of improving the salvage from this disease rests in an early diagnosis, prompt and thorough treatment.

FACTORS IN DIAGNOSIS

Concerted organized efforts of various agencies have broadcast volumes of information to the lay public, trying to impress them with the importance of reporting to their physicians regularly for examination. This is necessary if the people are to do their part in arresting the inroads of this malignant disease. That these influences are being effective is evinced by the number of patients reporting to their physicians for such examinations.

This puts an ever increasing responsibility upon all of us, already burdened alike with daily tasks seemingly endless. We must pledge anew our patience and ingenuity to sift from all the patients those who need further examination, and patiently work to the final diagnosis. Patients will show an ever increasing willingness to submit to whatever procedure is necessary when convinced of its urgency.

The anatomic location of the uterine cervix permits gross examination without difficulty; its relative insensitivity makes biopsy possible. Some authors have stated that it is possible to make a diagnosis of carcinoma of the cervix by palpation and inspection. Unfortunately this is too often true because of the advanced stage of the disease, in most instances too late for certainty of cure. The only real hope for cure of carcinoma of the cervix lies in a diagnosis made so early that the aid of a microscope is necessary. I am convinced that cure could be obtained in 80 per cent of such cases. Most teaching clinics demand that a study of the microscopic sections of tissues removed from cervical lesions by biopsy be made before the diagnosis of carcinoma is accepted and treatment instituted. This illustrates the importance of the

study of biopsy material; it leads me to urge its more common use. It is only by such measures that early diagnosis of cervical cancer can be made. This is an office procedure; it is not difficult, nor painful to patients, and is the only method of final analysis. Some authors have condemned biopsy of tissues with early malignant reactions, contending that such procedures increase risk of disseminating malignant cells. This is theoretical and much less a risk than that taken by the patient in waiting until the diagnosis can be made by gross inspection. All malignancies in pelvic tissues metastasize much later than such tumors in other tissues of the body.

Since biopsy is necessary in the diagnosis of cervical carcinoma and curettage in diagnosing carcinoma of the endometrium, the tissues must be thoroughly studied and certainty of the interpretation of the microscopic sections emphasized. This necessitates, in most instances, many sections being cut from many blocks of tissue, properly stained, and meticulously studied. The amount of this material being sent to laboratories in medical centers necessitates the establishment within their pathologic departments of special divisions to care properly for these tissues. This work should be under the supervision of one person specially trained and interested in this type of pathology. It may be necessary, in certain communities, for groups of physicians and hospitals to combine to foster such departments.

One needs only review certain aspects of this phase of diagnosis to realize its importance. Errors in diagnosis, on the one hand, lead to needless, destructive irradiation or surgery, and, on the other hand, errors of interpretation of malignant disease may postpone treatment until hope of cure has passed.

Progress of primary importance in the early diagnosis of uterine carcinoma is being made in the study of vaginal smears. Papanicolaou and Traut have shown that such studies can be of value only when they are made by those specially trained in the staining methods and the interpretation of the changes in the cells. It may well be that in such special pathologic groups findings of the early changes in these cells and in the biopsy specimens will lead to vital information concerning the earliest phases of this disease.

In recent literature constant reference is made to the "Schiller Test." This is the application of a modified Lugol's solution to the uterine cervix. The normal epithelium turns brown and the abnormal does not take the stain, and is white. This, then, delineates the abnormal tissue from which biopsy specimens are to be taken. It is not a test for cancer. This is a procedure of great value and should be utilized routinely in the differential diagnosis of lesions of the uterine cervix.

Some years ago the use of the colposcope was suggested, but experience has demonstrated it to be of little, if any, value.

The uterine endometrium is not easily studied by biopsy, and its pattern is so variable that I do not recommend office biopsy. If the bleeding is from the uterine canal and the cervix is normal, such patients should be hospitalized and a thorough study made of tissues obtained by curettage. The endometrium, in response to malignant growth, tends to project into the cavity of the uterus, and soon produces such an alarming symptom that patients come to their physicians at a much earlier date than those with cervical lesions. This permits earlier diagnosis and treatment, which emphasizes the very point I wish to make—early diagnosis, more certain cure.

So serious is this disease, that I have adopted the slogan, "any woman who bleeds from the cervix or uterus after establishment of the menopause has carcinoma unless another cause can be *proved*." Each day I believe more firmly in this statement. The accuracy of this statement increases as the numbers of months and years between the cessation of flow and the onset of bleeding increase.

The almost universal use of estrogens for menopausal symptoms and the urge for large doses has made these symptoms so confusing that physicians must return at once to fundamentals if they wish to save these women from carcinoma.

If the menopausal woman being treated with estrogens does not stop bleeding in a few weeks after removal of the drug, she should be submitted to investigation. This is in addition to the always present necessity of biopsy if there is any abnormality of the cervix. Patients with an early carcinoma of the cervix can also bleed after using estrogens.

I have been impressed with the fact that the longer the period of time which has elapsed between cessation of flow and the onset of bleeding in patients using estrogens the more certain is the presence of pelvic pathologic conditions in the pelvis.

Physicians are well aware of how trying these seemingly extra burdens are; how many, many biopsies are done and how few malignant conditions are found; how many

patients must be hospitalized, their cervices dilated and curetted with no malignancy. But both patient and doctor must contribute effort, time, and money if those who have this disease are to be found in the early phase. No effort is too great, no expense too much to the one who is to be saved the ravages of this dread disease.

Of course we all realize that many patients will be submitted to biopsy and curettage that do not have carcinoma. Many technicians will spend many hours searching for cellular reaction in tissues and smears. Physicians must spend hours in careful evaluation of these data. The salvage of one patient more than justifies these efforts. Many thousands of patients are submitted to roentgen ray studies to estimate the reaction in the gastro-intestinal tract without finding any pathologic condition. Gynecologists must parallel these efforts in their own field. It is only by such thorough, combined, coordinated effort that these problems can be solved.

SUMMARY AND CONCLUSIONS

1. Evidence is presented to emphasize the fixation of percentage of cures in carcinoma of the uterus.

2. Methods of treatment are outlined and analyzed.

3. Methods of diagnosis are discussed.

4. The idea of a special pathologic division to aid physicians in reaching decision from biopsy and smear is proposed.

5. Uniform absolute cooperation is necessary to conquer this and all other types of malignant disease.

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AIR TRAVEL NO HAZARD FOR INFANTS

There is no danger in air travel for an infant under 1 year of age, according to a medical consultant writing an answer to a query in *The Journal of the American Medical Association* for September 6. A United Airlines survey conducted during 1941 and 1942 revealed that a healthy baby reacts better to flight conditions than most adults. An infant's ears adjust to altitude more easily than an adult's, and airsickness is a rarity. Regurgitation of food when an infant is fed aloft may take place, however, unless care is taken to prevent the infant from swallowing air.

RADIATION TREATMENT OF CANCER OF THE CERVIX

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Because of the nature of the lesion and the avenues of extension of cancer of the cervix, radiation treatment is directed at an even and homogeneous administration of radiation to the pelvic space in a depth dose lethal to cancer cells. To this end external, transvaginal, and radium radiation is employed.

There are two types of cancer of the cervix. The more common form arises from the epidermoid cells covering the surface and the other from the cervical gland structure. Epidermoid carcinoma comprises approximately 95 per cent of all cancers of the cervix and adenocarcinoma the remaining 5 per cent.

The lesion of squamous cell cancer begins as a small, firm area at the margin of the external opening of the cervical canal or in an adjacent laceration scar. It is usually hyperemic, granular, and bleeds to the touch or on sponging. At this stage of development it is not clinically distinguishable from other lesions of the cervix and the diagnosis is made only from biopsy. If the lesion is frankly malignant, there is no difficulty in recognizing its true nature because disorderly arrangement of cell pattern together with atypical characteristics are no different from those of advanced cancer.

The normal cell pattern is disarranged by the downgrowth of groups and masses of atypical epidermoid cells beneath the normal basement membrane. The atypical characteristics are increased rapidity of growth, variations in cell size, increased mitoses, and varying degrees of cell compactness. The degree of these variations determines the histologic grade of malignancy, which is recognized as a criterion of rapidity of lesion progress and radiation sensitivity. The classification outlined by Broders is most generally accepted. It is numerical in sequence with grades from 1 to 4, inclusive. In grade 1 there is found 0 to 25 per cent undifferentiated cells; grade 2, 25 to 50 per cent; grade 3, 50 to 75 per cent; and in grade 4, 75 to 100 per cent. In grade 4 there is great cell compactness and complete loss of structural outline.

The more completely undifferentiated and embryonic the type of cancer cell the more sensitive it is apt to be to radiation.

Metastases occur early through the lym-

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phatics. The grade and size of the lesion is not an index to whether this extension has occurred. The body of the uterus, parametrium, and other pelvic structures are reached through this avenue of extension. Other extensions are by direct surface spread over the cervix to the vaginal wall, along the cervical canal to the endometrium, and late in the disease by blood stream emboli to remote body areas in some instances.

The stages of advancement are divided into four groups. In group 1 the lesion is limited to a single, small area of the cervix. In group 2 there is surface spread to the vaginal fornices and cervical canal, the parametrium is dense and the uterus remains movable. In group 3 there is nodular infiltration of the parametrium; surface spread on the vaginal wall is extensive, and the uterus is not easily movable and is infiltrated. In group 4 there is massive parametrial infiltration to the pelvic wall with involvement of the rectum and bladder, the full length of the vagina is involved and there is probably remote metastasis.

Adenocarcinoma arises either within the cervical canal or at its external orifice. Within the canal it begins as a firm nodule which presents at the external opening only after the cervix structure is extensively destroyed. Tissue for biopsy is obtained by curetting the canal and removing the cancer tissue in grayish white, friable masses. Adenocarcinoma presents the same histologic grades and stages of advancement as does the squamous cell type. A semblance of gland pattern in cell arrangement, together with a gland type cell, distinguishes it histologically from epidermoid cancer. Either tumor may practically fill the vagina with a cauliflower type growth or present a deep, cone shaped, destructive ulceration in the cervix.

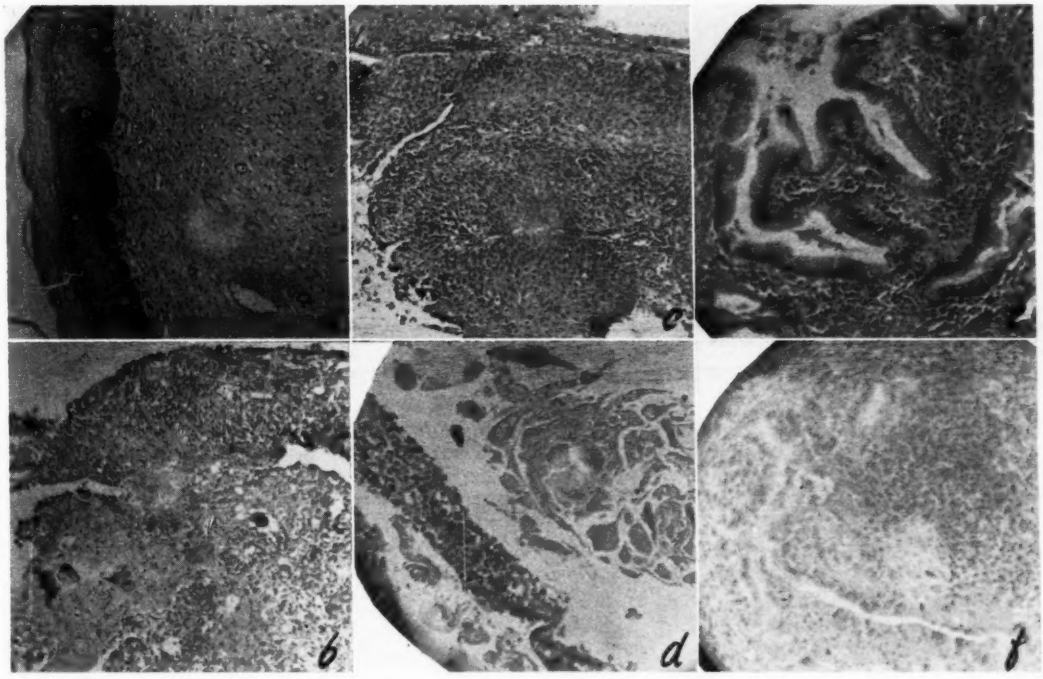

FIG. 1*a*. Photomicrograph of a cross section of a cervix normal except for a slight leukoplakia of the surface. Normal epidermoid cells functioning normally are shown. X 175.

b. Photomicrograph showing a grade 1 epidermoid carcinoma with surface ulceration. X 175.

c. Photomicrograph showing a grade 3 epidermoid carcinoma with nothing but cancer cells in the field. X 175.

d. Photomicrograph showing the effect of external radiation on the lesion shown in *c*. X 175.

e. Photomicrograph showing an adenocarcinoma of the cervix, grade 3. X 175.

f. Photomicograph showing the effect of external radiation on the lesion shown in *e*. X 175.

Radiation treatment must therefore be applied according to a plan dictated by the grade, stage, and condition of any given case when examination is made. If the stage is so advanced that obviously no radiation application could be expected to effect a cure, judgment must be used in outlining the most effective palliative treatment. If the stage is 1, 2, or in some instances 3 and it is seen that a cure is possible, curative treatment should be applied.

This plan of treatment is begun with ex-

ternal radiation given in daily fractional doses of 400 r. A dose of 200 r is given through each of two fields each day until the pelvis is completely encircled, using two anterior, two lateral, and two posterior views, 15 by 15 cm. each. The treatment is continued until the pelvis is encircled eight times, giving each field an exposure of 1,600 r measured in air. The grand total external skin dose is 9,600 r. The factors used are 250 kilovoltage peak; 15 milliamperes; 50 cm. focal skin distance; and a Thoraeus III plus 1 aluminum filter. To prevent radiation sickness the patient is given 100 mg. of thiamine hydrochloride and 5 units of soluble liver extract in the muscle following each fractional treatment.

On completion of the external application the pelvic space is further radiated through a vaginal approach. For this purpose a 2.5 cm. cavity cone is selected and positioned by the use of a periscope with the patient resting on her side. The side position is chosen because a movable uterus has been shown to gravitate to the dependent side of the pelvic midline by lateral view salpingograms. The parametrium, tube, and ovary swing downward from their lateral pelvic wall attachment to a position nearest the vaginal fornix, thus bringing these structures within the closest range of the cone outlet. The bowel also gravitates to the dependent side, leaving a minimal exposure. It is best to give an enema before each treatment to achieve maximum bowel shifting and to prevent the effect of backscatter on the mucosa from the bowel contents. Four transvaginal fields are used, none of which includes the cervix. The cervix and uterus are left largely to the action of the depth dose from external radiation and radium; therefore two anterolateral and two posterolateral fields in the vaginal fornix are used. The cone is pointed toward the anterior superior spine of the pelvis in the anterior position and just lateral to the sacrum in the posterior positions.

The exact position of the vaginal cone outlet with relation to the cervix can be determined by the use of the periscope light and mirror, and any necessary adjustments are made before it is latched securely to the master cone. A dose of 600 r is given each day through a single field until each field has had two such doses. A total of 1,200 r per field and a grand total of 4,800 r is given.

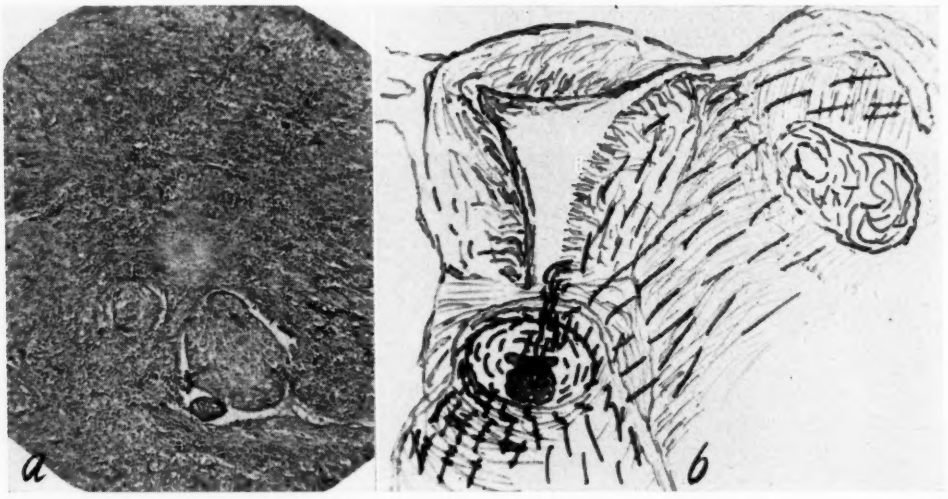

FIG. 2a. Photomicrograph showing cervical depth lymph channels packed with masses of epidermoid cancer cells. X 175.

b. Diagrammatic drawing showing paths of lymphatic mestastases, direct invasion, and surface spread of cancer of the cervix.

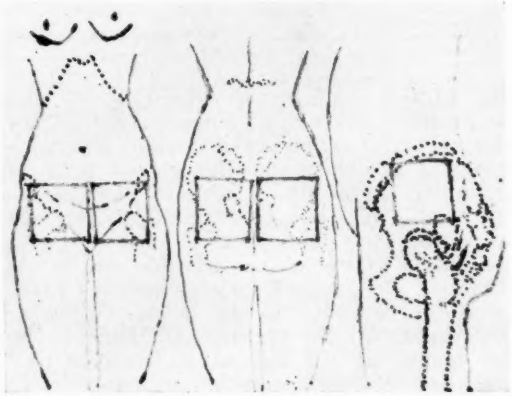

FIG. 3. Diagrammatic drawing showing two anterior, two posterior and two lateral area positions for the administration of external radiation to the pelvis.

The machine factors used are the same as for the external radiation except that focal skin distance is 40 cm. instead of 50 cm.

The transvaginal radiation is followed by radium element application. A double crossarm cervical-uterine applicator is chosen be-

FIG. 4. Roentgenogram showing the low position of the parametrium of the up side of the pelvis in the lateral position.

cause by this method action of the radium rays can best be localized to the cervix and uterus. The applicator is loaded with 30 mg. in each crossarm and 40 mg. in the uterine cavity section. The 100 mg. applicator is left in place for from twenty-four to forty hours, delivering a dose ranging from 2,400 to 4,000 mg. hours, depending upon the demands of the case.

The patient is hospitalized during the time of radium treatment and is prepared for the treatment by giving a soap suds enema to empty the colon and rectum. Under gas anesthesia the cervical canal is dilated with as little trauma as possible. Graded sizes of Hegar dilators are used until the canal will admit the intrauterine portion of the applicator and the crossarms fit snuggly against the cervix. The vaginal wall is packed away from the crossarms, as much as 3 cm. if possible. Iodoform gauze is used against the crossarms and the rest of the vagina is distended with a plain, sterile pack. The pack also holds the anterior wall of the rectum and the floor of the bladder away from the radium. Continuous catheter drainage is used to prevent disarrangement of the pack from over distention of the bladder. The patient is given a liquid diet and fruit juices as desired. If infection is present the patient is given 30,000 units of penicillin in the muscle every three hours during the time of treatment.

Follow-up observation and care is a most important phase of radiation treatment. The patient is advised to return each month for four months and then every three months for a year unless arising conditions require more frequent visits. A warm douche each day, containing a tablespoonful of salt and a teaspoon of soda to the quart of water, is usually prescribed. A tonic containing iron, such as ventrex capsules or ferrated lextron is given, 1 capsule after each meal for thirty days. There is usually some degree of secondary anemia.

The first postradiation monthly examination is for the purpose of noting the progress of radiation reaction. The skin hyperemia should be faded to a light brown color by this time. Hyperemia in the vaginal fornices is also faded. The radium reaction should be in a stage of slough with a tough, membran-

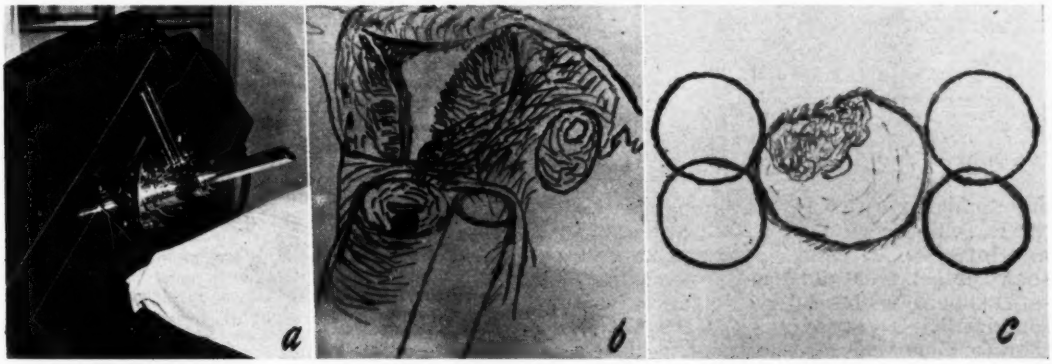

FIG. 5*a*. Photograph showing machine head, periscope, vaginal cone, and patient's cart positions for transvaginal radiation with the patient resting on her side.
b. Diagrammatic drawing showing the position of the vaginal cone outlet in the anterior vaginal fornix and lateral to the cervix.
c. Diagrammatic drawing showing four vaginal positions for cone outlet with relation to the cervix.

ous covering over the lesion and cancer infiltrated cervix structure. At the end of the second month the sloughing membrane should be gone or disappearing, leaving pink granulation with beginning fibrous tissue contraction. By the end of the fourth month

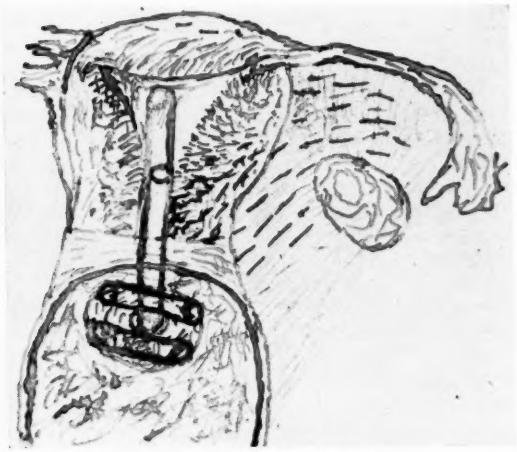

FIG. 6. Diagrammatic drawing showing the position of the cervical-uterine double crossarm applicator in place with the vaginal wall packed away from the radium.

the lesion should be completely healed, with the final stage of fibrous contraction well in progress.

If a sloughing ulcer with its accompanying pussy, foul discharge is present at the end of the fourth month, a recheck biopsy should be done. This is to learn if cancer cells are present or if the failure to heal is due to dense fibrosis of remaining cervix tissue, sclerosis of the terminal blood vessels, and infection. If cancer is found to persist, such further treatment as the condition dictates should be instituted. No cancer will be found in the great majority of these lesions; therefore active local treatment, daily if necessary, should be carried out until the lesion is healed. A month or two months is sometimes required for healing. This treatment is directed, first, at clearing the lesion of infection and, second, at stimulating the devitalized tissue to the formation of granulations and healing. For clearing infection and foul discharge, daily applications of sulfathiazol powder, unless the patient is sensitive to the drug, is found useful. This is followed by 5 per cent balsam of Peru in white vaseline for its stimulative effect. A useful combination for clearing infection and stimulation is equal parts of alvagel and aquaphor with 100,000 units of penicillin to the ounce. This is applied to the cervix on a cotton tampon and changed every day or every other day.

TABLE 1.—*Summary of Results in 26 Treated Cases of Cancer of the Cervix, 1940-1945*

Stage of Cancer	*No. Cases*	*Living*		*Dead*	
		No.	%	No.	%
Total	26	14	54	12	46
1 & 2	16	12	75	4	25
3	4	2	50	2	50
4	6	0	0	6	100

CONCLUSION

A careful examination of the patient to determine her general condition and the grade and stage of her cancer, followed by the radiation, using external, transvaginal, and radium in such a manner as to effect a homogenous and effective depth dose to the pelvic space, together with such medical treatment and after care as the case demands, is the most effective way of treating cancer of the cervix.

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109 North Oregon Street.

ABSTRACT OF DISCUSSION

Dr. Thomas G. Russell, Houston: The mortality table Dr. Turner showed certainly speaks well for the plan of treatment he has presented.

When radium is applied to the cervix alone the disease can be controlled for a distance of 3 or possibly 4 cm. from the cervical canal. This, of course, does not adequately treat the parametrial regions. The addition of external roentgen ray to the pelvis in radiation treatment of cancer of the cervix produced an increase in the percentage of five year survivals, but since this advance there has been no appreciable improvement in the over-all mortality figures. The problem is how to increase the dose to the parametrial region without damage to the normal tissues. From the outside the depth dose can be increased by using higher voltages, heavier filters, longer distances, or a combination of these.

Using a beam with a half-value layer of approximately 1.5 mm. of copper the air dose per 10 by 15 cm. field can be carried to from 2,000 to 2,400 r. This produces a sharp skin reaction which will be almost healed in three weeks. At this time the radium should be applied.

Radium therapy for each case should be individualized and an attempt be made to concentrate or direct the gamma irradiation where it is most needed. I have been using two general plans. In the first, a 50 mg. tandem is placed in the cervical canal and fundus and left in place for seventy-two hours. This is followed in from eight to ten days by a 25 mg. tube in each lateral fornix for seventy-two hours. This gives a total dose of 7,200 mg. hours. In the second method a weak cervical tandem and weak interstitial needles are left in place for from 100 to 120 hours. The dose in this method is between 7,000 and 7,500 mg. hours. The latter plan has been used chiefly in stage 4 cases where there has been some hope of a cure. The incidence of complications with these doses has not been unduly high.

Dr. Charles L. Martin, Dallas: I would like to com-

pliment Dr. Turner on his ingenious method of applying intravaginal roentgen therapy to the parametrium. However, I do not use his technique, principally because it is so time-consuming and also because it frequently produces unpleasant sequelae in the gastro-intestinal tract.

A recent survey of 300 cases of cancer of the cervix treated in our clinic showed a five-year salvage of 77 per cent in the group in which the lesion covered less than two-thirds of the face of the cervix and showed no evidence of extension. These cases were treated with a combined radium and roentgen ray technique which required only seven days for its administration, and no sequelae attributed to the treatment were observed in any of these patients. In the entire group the over-all salvage was 36.8 per cent, which compares favorably with statistics from other clinics.

Most of the patients coming under our observation are in poor financial circumstances and we believe that the reduction of the time of treatment and hospitalization is desirable.

Other clinics have reported some good results with intravaginal therapy and it undoubtedly is of value, but in many cases it cannot be used because of a contracted vagina or a bulky bleeding primary lesion.

Dr. J. C. Terrell, Stephenville: Dr. Turner has emphasized the difficulty of making a diagnosis of cancer in the first stage. While surgery might be adaptable at this period, the difficulty comes in determining the infiltration of the posterior vaginal wall and fornices; and after surgery has been done it is found that not all of the growth was removed. A rectal examination makes it easier to detect in the later stages.

Dr. Turner has given the technique and shown the difficulty of getting a lethal dose of roentgen ray and radium on cancer cells.

Dr. Turner closing: The method and pattern of transvaginal radiation described is suggested only in stages 1 and 2 and where the protective facial planes in front and behind the cervix and uterus are not invaded. In stages 3 and 4 the plan of treatment is dictated by the character and extent of cancer infiltration, and judgment must be used in its application. In addition to external radiation, radium capsules arranged in tandem in the vagina may be used. Interstitial radiation with radium needles or radon seeds may be found to meet special situations. Transvaginal radiation may be applied by the selection of a larger cone, round or flared, but in no case should a cone be used of such size or shape that it will not enter the vaginal tract sufficiently deep to protect the urethral orifice and vulva from exposure.

DENTISTRY CAN HELP PREVENT DEAFNESS

Abnormality of dental bite directly affects the eustachian tube, and apparently influences about 40 per cent of all deafness, according to an article by David J. Goodfriend, D.D.S., Philadelphia, in *Archives of Otolaryngology* for September, 1947. Studies carried on at the University of Pennsylvania revealed that 23 of the first 25 patients with hearing complaints but without any abnormalities in the ear itself showed abnormalities of bite. In a group of 168 students, 55 per cent had dental malocclusions; the hearing of this group was 13 per cent less than that of the students without the dental defects.

Dr. Goodfriend asserts that in certain patients proper dental treatment will help even progressive deafness of short duration, and in others it will slow down the rate at which the hearing is deteriorating. It will cure certain patients with neuralgia and dizziness due to ear trouble. The patient with ringing in the ears may also be benefited.

ROENTGEN THERAPY FOR LYMPHOID HYPERPLASIA OF THE NASOPHARYNX

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E. D. McKAY, M. D.†
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The eustachian, or auditory tube, is the channel through which the tympanic cavity or inner ear communicates with the nasal part of the pharynx.

A knowledge of its topographic anatomy is essential for this discussion. It originates from an orifice on the anterior wall of the nasopharynx and extends posteriorly, laterally, and superiorly to its tympanic orifice on the anterior wall of the tympanic cavity. The entire tube consists of two portions, the cartilaginous, which is the anteromedial two-thirds, and the osseous, which is the posterolateral one-third. The entire length of the tube varies from approximately 3 to 4 cm. The distance from the nasopharyngeal orifice in the average adult to the nearest surface of the skin, located just below the temporomandibular joint, is approximately 4.5 cm. In children, the course of the eustachian tube from its nasopharyngeal orifice tends to be more horizontal toward the middle ear and its length is correspondingly considerably less. The function of the eustachian tube is to ventilate the middle ear, the pneumatized spaces in the mastoid and petrous portion of the temporal bone, and the peritubal cells.

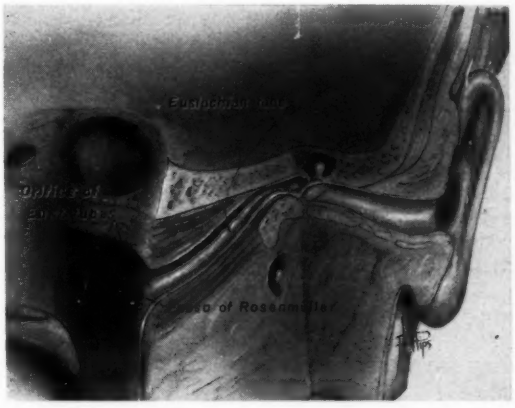

FIG. 1. Block section drawing of nasopharynx, eustachian tube, and middle ear.

For the purpose of this discussion, the osseous portion of the eustachian tube can be disposed of by saying merely that it has

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relatively little lymphoid tissue and is rarely diseased.

The anteromedial cartilaginous two-thirds of the eustachian tube, on the other hand, is so constructed and situated that it is much more vulnerable to pathologic processes.

On the lateral wall of the nasopharynx lies the orifice of the eustachian tube bounded superiorly and posteriorly by a firm prominence, the torus, formed by the medial end of the cartilage of the tube which elevates the mucous membrane. Behind this fold is a deep recess, the pharyngeal recess, or the fossa of Rosenmüller. On the posterior wall of the nasopharynx is a mass of lymphoid tissue which is known as the pharyngeal tonsil or the adenoids, which are most marked in childhood.

For the purpose of this study, the lymphoid layer within the tunica propria is the only important histologic structure within the eustachian tube. It is better developed toward the nasopharyngeal end where the lymphocytes are sometimes collected into follicles forming what is frequently referred to as the "tubal tonsil." Polvogt and Bobb[4] have stated that these lymphoid nodules may also be found in other parts of the tube. The lymphoid layer gradually becomes thinner auralward, disappearing completely at the vault. There is close association between the lymphoid tissue of the eustachian tube and the pharyngeal tonsil (or adenoids), which are connected by means of numerous ramifying lymphatic branches in the submucosa of the nasopharynx.

As a child advances in age, the amount of lymphoid tissue within the nasopharynx and eustachian tube normally diminishes with a gradual atrophy of the adenoids and corresponding loss of the lymphatic structures in the eustachian tube.

Frequently, however, owing to repeated upper respiratory infections, the lymphoid tissue of the nasopharynx hypertrophies and may form such a mass of tissue that it may block the nasopharyngeal air passages. It is not infrequent that the lymphatic tissue about the fossa of Rosenmüller hypertrophies to such an extent that it causes complete obstruction to the orifice of the eustachian tube. As the free passage of air from the nasopharynx through the eustachian tube to the middle ear becomes interrupted and is finally prevented, there follows a corresponding interference in hearing which finally ends in deafness. This is known as conductive deafness and is amenable to treatment, whereas preceptive or nerve deafness does not respond to therapy. Adenoidectomy will usually remove sufficient lymphoid tissue in the nasopharynx to restore nose breathing, but because of the anatomical recess of the fossa of Rosenmüller and the integral relationship of the lymphoid tissue and mucous membrane, it is surgically impossible to remove all of the lymphoid tissue about the orifice of the eustachian tube.

It is sometimes not until after adenoidectomy that hypertrophy of lymphoid tissue about the orifice of the eustachian tube takes place. Since adenoids recur in about 75 per cent of children in whom tonsils and adenoids have been removed before puberty, it is evident that no appreciable atrophy of the lymphoid tissue about the eustachian orifice would ensue. Even when recurrance of adenoid tissue does not follow, residual infection, the production of pus, and occasionally a secondary allergic hyperemia will stimulate the eustachian lymphoid tissue to hypertrophy.

Either unilateral or bilateral hyperplasia of the tubal tonsils is frequently seen in children and is far more common than appreciated in adults.

Crowe and Baylor[2] were the first to report (1939) the use of irradiation in the treatment of lymphoid hyperplasia of the nasopharynx. Their original report on the use of radium and the reports of other authors using both radium and roentgen rays have been very gratifying. Crowe and Baylor stated, "We feel that if school children in the primary grades were examined with a nasopharyngoscope at least once a year and those with hyperplastic lymphoid tissue in and around the orifice of the eustachian tubes were treated with radiation as often as necessary to insure normal functioning of the tubes, the number of deaf adults in the next generation could be reduced by 50 per cent."

The effectiveness of irradiation in these cases is based upon the fact that lymphoid tissue, which is primarily concerned, is among the most radiosensitive of all tissues in the body. It is possible, therefore, to give small enough doses to produce destruction of the lymphoid cells without undue injury to the surrounding normal structures. As a person grows older, there is generally a gradual infiltration of the nasopharyngeal lymph nodes by fibrous connective tissue, which results in a progressive decrease in the degree of lymphoid atrophy following irradiation. Crowe found that if the condition of lymphoid hyperplasia is recognized and properly treated before the age of 15, hearing usually returns to near the normal level, whereas after that age the results are far less satisfactory.

The main purpose of irradiation of hyper-

plastic lymphoid tissue in the nasopharynx is for the prevention or relief of deafness; however, Fisher[3] also reported its use in the treatment of recurrent acute upper respiratory infection, recurrent otitis media, bronchial asthma especially in children, tinnitus and vertigo, and chronic obstruction of the nares.

Further gratifying results with irradiation in the treatment of hypertrophied tonsils and adenoids, granular pharyngitis, and other nasopharyngeal chronic inflammatory conditions have been reported, but this paper is primarily concerned with the treatment of hyperplastic lymphoid tissue of the nasopharynx for the prevention or cure of conductive deafness.

Before irradiating the nasopharynx it is essential to reduce any existing upper respiratory infection to a minimum. Irradiation should not be attempted during an acute inflammatory episode. When large adenoids and tonsils are present, it is usually advisable that they first be removed.

In order satisfactorily to follow the progress of a patient subsequent to irradiation, it is advisable to procure audiometer readings before and after treatment. They give the physician an objective evaluation in addition to the subjective clinical response, usually volunteered by the patient. Direct and indirect inspection of the nasopharynx with the aid of a nasopharyngoscope is necessary in arriving at a diagnosis and in determining the subsequent improvement. A good history pertaining to childhood diseases and particularly to repeated upper respiratory infections is extremely beneficial.

As in other conditions amenable to irradiation, the question as to whether roentgen rays or radium is best adapted to the treatment of nasopharyngeal lymphoid hyperplasia has not been satisfactorily answered. The therapeutic effects of both are the same. An advantage in the use of roentgen rays is their ease of application with no need to pass an instrument into the nose. Since lymphoid tissue also extends from the orifice up the cartilaginous portion of the eustachian tube, it is assumed by some that the hyperplasia also progresses auralward and can therefore be satisfactorily affected only by the use of roentgen rays. Sometimes the hyperplasia extends far about the orifice within the nasopharynx, in which case the homogenous distribution of roentgen rays is considered advantageous.

The strongest argument in favor of radium is the fact that, presuming the eustachian orifice is all that requires irradiation, the modern beta-ray applicator devised by Burnam and Crowe[1] makes it possible to irradiate this limited area without many rays penetrating distant tissues. Although no injurious effects have been reported to growing epiphyses superimposed in the path of roentgen rays directed toward the nasopharynx, such a possibility cannot be excluded, particularly when large or repeated doses are used. With

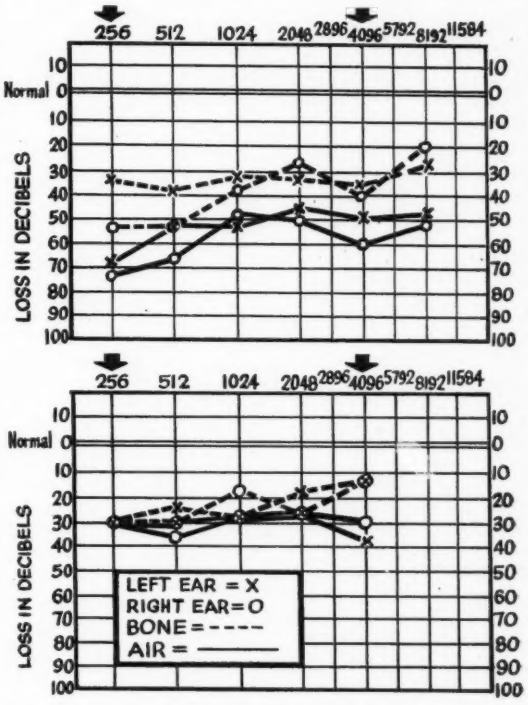

FIG. 2. Audiograms (upper) before therapy and (lower) showing improvement two months after roentgen therapy.

the beta-ray applicator the treatment time has been considerably reduced, making it easier to use radium in treating young children. Unless this applicator is used in conjunction with a nasopharyngoscope or laryngeal mirror there is some chance of not placing the radium in its proper position in relation to the eustachian orifice. Anyone knowing anatomic relationships should have no trouble in properly directing the roentgen-ray tube toward the nasopharynx. Some temporary disadvantages in the use of roentgen rays are the fact that since a larger field is usually irradiated there is usually more dryness of the mouth. When using a lateral port, not uncommonly a "roentgen parotitis" results with swelling and some aching of the parotid gland, which may persist one or two days. With larger doses, there may be temporary loss of hair or whiskers in the irradiated field.

Although roentgen therapy has been used in treating lymphoid hyperplasia of the nasopharynx for approximately ten years, we are limiting our evaluation of results to patients treated at the Scott and White Clinic since our association with it.

During 1946 roentgen therapy was given to 53 patients. Questionnaires inquiring into improvement and undesirable side reactions experienced were sent to these patients. Of the group, 44 patients or 83 per cent returned the completed questionnaires, giving an approximate idea of the results obtained. There were 23 men and 21 women ranging in age from 5 to 68 years. There was a fairly equal distribution in the various age groups.

Since the majority of patients seen at this clinic are adults coming from distant places, it is not strange that a large proportion of patients in this series are also adults. In a center where more local patients are seen, undoubtedly the majority of patients would be children, since, as pointed out earlier in this paper, the best response to treatment is observed in children.

In view of the great distances from which the patients came, it was impractical to ask them to return for frequent follow-up series. We attempted to decide upon a single dose which might prove beneficial. Following the custom of previous years, we started with doses ranging about 500 r to each of the two lateral ports using 220 kilovolts, 8 milliamperes, 50 inch distance, 1 mm. copper plus 1 mm. aluminum filter giving a half-value layer of 1.49 mm. copper through 10 by 10 cm. portals. In the majority of instances, true lateral ports just below the temporomandibular joints were used, while in some, oblique fields directed through the anterior cheeks toward the nasopharynx were used with no appreciable difference in benefit. All patients given these higher dosages experienced parotid swelling which lasted from twenty-four to forty-eight hours. Fifty per cent of this group had a temporary loss of hair about the local area of treatment. A small number of patients also complained of various other minor temporary reactions (table 1).

TABLE 1.—*Undesirable Reactions Following Roentgen Treatment of Lymphoid Hyperplasia of Nasophraynx.*

Dosage in r	No. Cases	Parotid Swelling	Hair Loss	Dry Mouth	Taste Loss	Pain & Tenderness	Nausea	Congestion	Difficult Swallowing
500-590	10	10	5	5	2	2	2	2	1
400-480	4	4		1	1				
Single Ant. Field 300-370	4	1				1		1	
Bilat. Fields 300-370	9	3		1					
Single Ant. Field-250	1								
Bilat. Fields 220-290	11	2		1	1				
Single Ant. Field-190	1								
Bilat. Fields 185-195	4	1							

In the hope of avoiding the parotid swelling, seen in about 40 per cent of the treated patients, and the frequent loss of hair in the irradiated field, the dosages were lowered. When the dosage was reduced below 370 r, the incidence of parotid swelling was much less and other minor complaints were only occasional. In an attempt further to eliminate parotid swelling, a single anterior field directed through the antra and mouth toward the nasopharynx was used on a number of patients, but still parotid swelling was not entirely avoided. The dosage between 185 r and 195 r were employed in children under 10 years of age. Smaller doses should be used with children since their lymphoid tissue has had less time to become fibrotic and is therefore more radiosensitive. Furthermore, the size of the skull is smaller, thus allowing a proportionate greater effective dose at the nasopharynx.

In general, the most objectionable reactions following roentgen therapy are the parotid swelling and frequent loss of hair. However, with a bilateral dosage of approximately 350 r, it is believed that these reactions will be either moderate in extent or seldom seen. When the parotid swelling does occur, the associated pain can usually be controlled by the application of an ice bag and the administration of aspirin.

TABLE 2.—*Subjective Improvement Following Various Dosages and Techniques in Roentgen Treatment of Lymphoid Hyperplasia of Nasopharynx.*

		Improvement Noted		
	No. Cases	None	Moderate	Marked
500-590	10	2	2	6
400-480	4	3		1
Single Ant. Field 300-370	4		2	2
Bilat Fields 300-370	9	4	5	
Single Ant. Field-250	1		1	
Bilat. Fields 220-290	11	2	7	2
Single Ant. Field-190	1		1	
Bilat. Fields 185-195	4	2		2

According to the returned questionnaires, approximately 70 per cent of the patients

noted improvement following roentgen therapy. Of this number, 87 per cent stated that their improvement has remained up to the date of the questioning, which varied from three months to a year.

Table 2 shows that 80 per cent of the patients who received between 500 and 590 r were benefited, with a large proportion of them showing "marked" benefit. Although this series of cases is too small to allow any general conclusions, it does suggest that good results can be obtained with doses of 350 r or less.

Until the latter part of 1946, we were handicapped by postwar delays in obtaining a satisfactory audiometer to replace one which had to be discarded. Even though the recording of audiometer readings, is considered the most objective method of evaluating improvement in hearing, we were able to obtain such a record on only a few patients toward the close of the year. For the sake of those who may not be familiar with such records, the graphs in figure 2 show the recording before and two months after roentgen therapy to the nasopharynx of one of our patients.

In considering the graphs, it should be remembered that prior to the study of the prevention of deafness by Crowe and Baylor there was a classic teaching in otology that "impaired hearing for high tones with good hearing for low tones" indicates an inner ear or nerve lesion. But the work of Crowe and his associates demonstrated that at least in children the loss of high tones may be due to conductive deafness and that as the obstruction to the eustachian orifice is removed, there is a return of hearing for high tones.

The upper graph in figure 2 shows two solid lines representing the range of hearing for both the right and the left ear. The broken lines represent nerve perception as received through bone and are not important for this study. This graph was made upon examination of the patient before roentgen therapy was given and shows an average loss of about 60 decibels in hearing for both ears. The graph below is an audiogram for the same patient two months after receiving 444 r with conductive hearing improved about 30 decibels. Clinically, we knew the patient was much improved, but by means of audiograms before and after treatment, the results can be objectively demonstrated.

In conclusion, our results agreed with those of others in improving or restoring hearing in conductive deafness, particularly in children.

We would like to emphasize that the majority of our patients came from great distances and that our plan of treatment had to be both practical and financially feasible for the patient. As a result, only a few patients returned for a second or third course of roentgen treatments. It is believed that many who showed little or no improvement following one course of treatment would have benefited by additional roentgen therapy.

Although many patients are benefited by a single bilateral dose of 350 r or less, we believe that when it is practical, smaller doses repeated at intervals of a week to a month for several treatments, as suggested by other authors, are better tolerated and produce equally good if not better results.

We are now also using a 50 mg. beta-ray radium applicator as devised by Crowe on some patients with apparently equally good results, but because of the ease of applying roentgen therapy, this method is still more often used.

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ABSTRACT OF DISCUSSION

Dr. Richard E. Barr, Beaumont: Dr. Seedorf and Dr. McKay have presented a clear and concise picture of lymphoid hyperplasia of the nasopharynx and its treatment with roentgen therapy. Most of us receive our patients from the city in which we live or from nearby and therefore have an advantage over the authors in that we can use fractional doses and follow up our cases better. This enables us to give a little larger amount of roentgen therapy but in no case is the total dose large. Dr. Seedorf is to be congratulated on adapting such a satisfactory technique to a large clinic and hospital that draws its patients from great distances.

There is some variation in the treatment to fit the age and particular case but I usually use two lateral ports of either 6 by 8 cm. or 10 by 10 cm. and give about 100 r to each weekly, employing 200 kilovolts, 25 milliamperes, 50 cm. distance, 0.75 copper plus 1 mm. aluminum filter. The total dose is approximately 600 to 1,000 r. This is merely a modification of the old O'Brien technique for the treatment of catarrhal deafness that I have used for years.

Dr. Seedorf, closing: I would like to emphasize the claim that roentgen therapy is often beneficial even after tonsillectomy and adenoidectomy. This is further appreciated when reference is made to the words of Crowe in which he says that adenoids tend to recur in approximately 75 per cent of children in whom tonsils and adenoids have been removed before puberty.

The Bureau of Medical Economic Research of the American Medical Association reports that the American people spend two and one-half times as much for tobacco as they spend for physicians' services.

DACRYOCYSTORHINOSTOMY

HAROLD M. BLOCK, A. B., M. D.
DALLAS, TEXAS

When a surgical procedure is performed, whether the simplest or the most intricate, there are four motivating principles. These four principles are the same today as they were at the very incipiency of surgery, and a surgeon must not allow himself to lose sight of them at any time. Ease of execution, habit, and training may alter the interpretation or dull the surgeon's perspective, but in spite of this he must keep an open mind for all new advancements.

The four motivating principles to which I refer are simple, everyday axioms which are present in the subconscious mind; however, I should like to expose them to conscious realization. They are (1) to remove the pathologic condition; (2) to relieve symptoms; (3) to disturb anatomy as little as possible; and (4) to restore physiologic function or do minimal interference with it.

Every surgical procedure violates these points singly or collectively, either temporarily or permanently. It is the balancing of all factors, one against the other, or group against group, which is the cornerstone of surgery. Obviously, when the favorable factors overbalance the unfavorable, the conception of an operation becomes the performance. This balance, then, becomes the yardstick by which the results are gauged. This is healthy, normal, and wholesome.

When a patient has lacrimal obstruction, either with or without infection or other complications, a course of treatment must be considered. Should the sac be removed? Should a fistulizing operation be performed? In the presence of malignancy or tuberculosis of the lacrimal sac or duct, no one would consider dacryocystorhinostomy. When the sac has been destroyed by repeated infections or by disease of the ethmoid cells, a procedure must be outlined. But experience has shown that these conditions are relatively rare and are easily adjusted if known or encountered.

Since such pathologic conditions are seldom encountered, dacryocystorhinostomy is best suited to the largest percentage of lacrimal sac obstruction. In contrast to dacryocystectomy, this operation better relieves the symptoms, disturbs the anatomy less, and restores the physiologic function. It does not remove the pathologic disturbance, but in this condition it matters little.

In the study of the patient preoperatively —and I need not point out that this is highly important—free use is made of the roentgen ray and the probe. If the sac does not visualize with lipiodal or permit the passage of the probe, there must be a reason. The sac may have eroded, a mucocele may have formed which does not communicate with the canaliculus, or the anterior ethmoid cell may have destroyed the tissues. When adequate sac tissue is present, lipiodal will show a clearly defined shadow. The surgeon should be aware if it does not.

No patient should be subjected to surgery until the probe has been used, but probing can easily be overdone. Experience has shown that this procedure is often disappointing, yet there remains the rare case where it is of value. If two, or a maximum of three, probings do not cure the condition, it should be discontinued.

With favorable roentgen findings and negative probing results, dacryocystorhinostomy must be considered. Any patient who is able to tolerate removal of the sac is suitable for this operation. Atrophic rhinitis and high, severe, anterior septal deviation may alter the results, and if possible, the septum should be corrected prior to sac surgery.

The main operative structures, naturally, are the lacrimal sac and the fossa in which it lies. The latter is formed by the depression between the anterior and posterior lacrimal crests. The anterior lacrimal crest is easily palpated, being the continuation upward of the inferior rim of the orbit. It is formed by the frontal process of the maxilla. It is very dense and strong. The posterior lacrimal crest is the continuation downward of the superior rim of the orbit. It lies in the lacrimal bone, which is very thin and delicate. Since it is the anterior part of the fossa and the anterior lacrimal crest which are dealt with in the surgery, heavy bone might be anticipated. The lacrimal sac is further encased in periosteum, which bridges over the fossa and is called the lacrimal facia. In the surgical approach to the lacrimal sac, the skin of the medial commissure is first encountered, and immediately beneath this are the fibers of the orbicularis oculi muscle. Arising from the lacrimal crest is the anterior limb of the palpebral ligament, which extends forward to the tarsal plates. It is broad and dense and has a sharp inferior border. This border used as a landmark will lead unerringly to the lacrimal sac and fossa.

The lacrimal sac and nasolacrimal duct may be considered one structure; they differ little in histology. The lacrimal sac itself is approximately 12 mm. in length, 4 to 8 mm. in breadth, and 2 to 3 mm. in lateral width. Normally its capacity is about 20 cmm; however, in pathologic conditions, it has been

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known to contain much more. The upper 3 to 5 mm. of the sac, which lies above the medial canthus, is called the fundus. The sac might be joined individually or collectively by the superior and inferior lacrimal canaliculi, and at this point of junction, it is called the sinus of Maier. The sac is adherent to the periosteum on its superior and posterior aspect only, being free elsewhere.

Histologically, the sac wall is lined by two layers of columnar epithelium, which rest on a basement membrane. Goblet cells and sometimes mucous glands are present. Adjacent to the basement membrane the substantia propria consists of two layers, also. The interior layer contains much adenoid tissue, sometimes in follicles. The fibrous layer contains many elastic fibers and a rich venous plexus. Serous glands are found in the region of the fundus of the sac but not in the walls of the duct.

Three main arteries furnish the blood. The medial superior palpebral artery, supplying the sac, and the medial inferior palpebral artery, supplying the duct, are both branches of the ophthalmic artery. Both the sac and the duct receive the angular branch of the facial artery. The internal maxillary artery supplies the lower part of the sac and the upper part of the duct through its infra-orbital branch.

The venous plexus drains into the angular and inferior orbital veins. There are also venous connections with the mucous membrane of the anterior ethmoidal cells.

The trigeminal nerve supplies the afferent fibers; its infratrochlear branch is distributed to the sac and upper part of the duct.

The fossa for the lacrimal sac lies opposite the middle meatus of the nose and just below the anterior tip of the middle turbinate.

When the case at hand is judged suitable for dacryocystorhinostomy, the patient should be prepared both mentally and physically for the operation. Most patients who have suffered from chronic epiphora or even one acute attack of cystitis, are thrilled with the prospect of improvement, to say nothing of a cure. It is advisable, however, to place the entire matter before them so that they may know the issues involved and the limitations caused by pathologic conditions which cannot always be foretold.

The eye to be operated upon should be free from any acute inflammation in any portion of the mucous membrane. Ulceration of the cornea should be relieved if possible. A week before surgery, longer in the more chronic cases, it is advisable to commence daily lavaging of the lacrimal sac with either saline or boric acid solution. The returned solution should be mucoid in character and free from pus. It is also advisable for the patient to use a weak zinc sulphate solution as eye drops three or four times a day. These simple procedures are all that are necessary in the preparation of the sac for surgery.

The patient may enter the hospital only a few hours prior to the operation; the next meal is withheld and a sedative given. The lacrimal sac should not be washed the day of surgery, as the accumulation of mucus adds to its distention, making it easier to locate and to dissect. Also, no dye should be used, as this is likely to stain the skin in the operative field. The rest of the preoperative orders will depend upon the preferences of the individual surgeon. Good results are obtained with morphine, grains ¼ in males, 1/6 in females and small males, and in addition to this, a capsule of nembutal or seconal.

In the operating room, the patient is prepared by scrubbing both orbital areas with soap and water, followed by one-half strength tincture of iodine, the latter removed with alcohol. Immediately prior to local anesthesia, the head is rotated about 15 degrees to the side opposite the pathologic condition. This gives better exposure. The conjunctival sac is irrigated and a few drops of a cocaine substitute are instilled. At this point, a small pack of 4 per cent cocaine and epinephrine is placed above the inferior turbinate so that it lies in the middle meatus over the fossa for the lacrimal sac. Local anesthesia of 2 per cent procaine and epinephrine is injected into the skin along the anterior lacrimal crest and the inferior rim of the orbit for about 25 mm. A few minims are injected 5 mm. above the palpebral ligament and 8 to 10 mm. deep, so as to block the infratrochlear nerve. The skin incision begins 2 mm. above and 2 mm. medial to the medial canthus and follows along the anterior lacrimal crest, the total incision approximating 15 mm. Such incision avoids the troublesome bleeding which occurs when angular vessels which lie further medially are cut. The edge of the skin is dissected along the incision and the lacrimal speculum is inserted. The orbicularis oculi muscle fibers are separated by blunt dissection and the anterior limb of the medial palpebral ligament is found. As indicated above, this ligament is followed to the anterior lacrimal crest, from which it is separated. At this point the lacrimal fascia should be identifiable, lying immediately beneath the ligament which indicates the approach to the sac. The lacrimal fascia is opened.

The sac is carefully dissected so that it may be retracted laterally. However, it is advantageous to pay attention to the anterior inferior sac region and dissect only so much of the sac as is necessary to expose the

anterior lacrimal crest and the lacrimal bone immediately behind it. This usually requires a field of some 10 mm., not a difficult area if the dissection is clean and the sac uninjured.

As soon as the exposure is considered adequate, the hammer and chisel are used and the anterior lacrimal crest is removed inferiorly. Since this is heavy maxilla, difficulties may be expected. When it is evident that the lacrimal crest is perforated, extreme caution must be exerted to avoid injury to the nasal mucous membrane, as this would cause troublesome bleeding. The dissection of the bone is then carried into the lacrimal fossa, going inferiorly as far as the inferior lacrimal crest will permit, and posteriorly until a perforation of 10 mm. exists in the medial wall of the orbit. This can be done with a chisel or any other bone-cutting device. All bony fragments should be removed.

The sac and nasal mucous membrane now lie adjacent to each other. Incisions are made in the nasal mucous membrane and in the lacrimal sac, which lie in the same proximity, extending the entire length of the bony opening. At this point, bleeding should be controlled with pressure and epinephrine. The wall of the lacrimal sac should be inspected for any possibility of tumors or granuloma. Nothing further is done to the sac. The posterior flaps of the sac and mucous membrane are now approximated with two silk sutures. This procedure is best accomplished with a very small, 3/8 circle needle. Two similar sutures are placed in the anterior flaps, but these are not tied.

To prevent adhesion of the wall of the anastomosis, which would completely nullify the surgery, it is extremely advantageous to suture a rubber strip to the lateral wall of the sac. This strip should be from 10 to 12 mm. in width and from 40 to 50 mm. in length. It is pulled through the anastomosis into the nasal passage and cut off at the external nares. The suture material holding it in place is 0000 gut, which usually absorbs within a week. After the rubber drain is in place, the two sutures in the anterior flaps are tied, and the wound is ready for closure. The anterior limb of the palpebral ligament is sutured to the anterior lacrimal crest; however, this step may be omitted, as the posterior limb prevents disfiguration. The retractor is removed and the skin closed with silk sutures.

A heavy, firm pressure bandage is applied in such a way as to press upon the operative area. This prevents edema, relieves pain, and hastens recovery. The bandage is left on for two days and is then replaced by a simple eye patch for two more days. At the end of the fourth day, the sutures are removed and patching is usually discontinued. Between the fifth and seventh days, the rubber dam probably will be extruded by the patient sneezing, coughing, or wiping his nose; however, if this does not occur, it can be gently pulled on until it is free.

As soon as the anastomosis is freed of all interference, daily washings of the lacrimal canaliculi are administered for from four to six days. This carries the patient to the end of the second postoperative week, and from then on, the results can be evaluated.

My procedure differs little from that of many other operators, except in the use of the rubber tissue. I find that two British ophthalmological surgeons, Williams and Hill, use this method also. It is my confirmed opinion that many failures in dacryocystorhinostomy are due to adhesions between the lips of the mucous membrane. Since the rubber lies in place for several days, it prevents approximation of raw surfaces.

But to finish the original theme of this paper: Here, as in many other fields of surgery, it is not possible to remove pathologic conditions or restore physiologic function, but the patient's symptoms can be relieved by creating new anatomical circumstances. I believe dacryocystorhinostomy is a valuable procedure, one which can be a great source of relief from epiphora and a satisfaction to the surgeon. My results show that under average daily conditions of life, troublesome tearing and recurrent infections are alleviated. I recommend the surgery.

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Medical Arts Building.

ABSTRACT OF DISCUSSION

Dr. William D. Gill, San Antonio: In the light of present knowledge concerning obstructions to the conducting portion of the lacrimal apparatus, the consensus is that the surest way to obtain satisfactory relief from such obstructions is by surgery alone. A great many operations have been described to accomplish this result. The present method of performing an anastomosis between the lacrimal sac and the nasal cavity may be said to date from the description of an operation of this nature in 1909 by Toti, an Italian living in Florence, Italy. Much has been written on this subject and many modifications of the original Toti operation have been described. Time will not permit their being mentioned in this discussion.

Many of the older operations called for precise approximation of the nasal mucous membrane with that of the lacrimal sac by suture. The technical

difficulties involved in suturing the two structures together were almost insurmountable, and even in the hands of skillful operators they were not easily overcome. Subsequent modifications have been devised in an effort to simplify the procedure. Dimitry, of New Orleans, may be mentioned as the one who has devised what is possibly the simplest method of re-establishing the conducting portion of the lacrimal apparatus by making an opening with an ordinary Elliott trephine from a skin over the sac entirely through both sides of the sac into the nasal cavity. According to reports by Dimitry the results have been satisfactory. I cannot speak from experience on this point for I have had no occasion to use the procedure.

There has long been a debate between ophthalmologists and rhinologists as to just what division of special practice this particular operation belongs in. The rhinologist believes that it comes within his province and he attacks the problem by operating entirely from within the nose, while the ophthalmic surgeon uses what might be called the external or open method of attack from the skin surface.

Regardless of the approach, the great difficulty in either of these methods has been to maintain patency of the opening into the nose. Many failures are traceable to the fact that the patients often receive very little postoperative care. It is essential that the opening into the nose be maintained by occasionally passing probes through the sac into the nose, and by paying strict attention to the nose during the healing process. Dr. Block has called attention to a very valuable method for maintaining or insuring the patency of this opening by the use of rubber tissue. This has been particularly interesting to me, for I have used a somewhat similar method during the past fifteen years which I would like to call to your attention at this time. The principle involved is similar to that outlined by Dr. Block.

The sac is exposed in the customary manner, lifted from its bed, and severed at the lower end. An opening is made into the nose through bone and nasal mucosa. A very small (No. 17) rubber catheter is introduced into the sac and fastened with triple 0 plain catgut suture to the upper portion of the sac. The lower portion of the sac is then united to the side of the catheter with two sutures, in such manner that when the catheter is pushed into the nose the sac is pulled along with it. The catheter is brought out of the nostril on the same side and cut off. After three or four days it will be found that the catheter can be very easily removed by gentle traction on the protruding end. This period of time allows nature sufficient time to establish a firm union between the two mucosal surfaces.

Again I would like to emphasize the importance of the follow-up treatment. This phase is just as important as the surgical procedure itself, for if it is neglected, the results of the surgical procedure on the lacrimal sac will be in most instances completely nullified. I wish to commend Dr. Block on the excellence of his presentation of this interesting subject.

Dr. Everett R. Veirs, Temple: Dr. Block has covered the subject creditably. One would hardly go wrong to follow his technique.

It seems to me that by all odds the most important consideration in doing a dacryocystorrhinotomy is to make a large opening both in the tear sac and into the nose. The type of flap, whether some type of tubing is put into the nose, and so forth, does not seem to make much difference if the opening is large enough to begin with.

I prefer Traquair's technique. The medial half of the sac is excised, a rectangular flap of nasal mucous membrane is cut so as to hinge anteriorly, and what was the posterior edge of the nasal membrane is sutured to the cut anterior edge of the tear sac.

I have yet to see a case where I thought pathologic nasal conditions had anything to do with causing tear sac infection, or any case where such conditions interfered with the result of a tear sac operation.

It does not seem to make any difference whether the sac is filled with pus at the time of operation, although it is not a bad idea to have it free of pus. Irrigation once with penicillin solution will usually do this. I use only a small dressing to cover the operative site in adults. If the opening is large enough to begin with, I do not believe postoperative irrigations and probing are necessary.

Dr. Louis Daily, Houston: Dr. Block presented a good technique for the external operation. In my opinion the ideal operation for dacryocystitis is the intranasal operation, which falls into the realm of the rhinologist. The operation which I do and which was described in the *American Journal of Ophthalmology* in 1927, is a modification of the Halle-West operation. Since 1923, I have done this operation in a large series of cases, and my results, with few exceptions, have been good. My best results have been with large cysts, phlegmon, and fistulas of the sac. Some of the fistulas that had existed for fifteen or twenty years have closed up completely in a couple of weeks. The advantage of the intranasal operation is the absence of an external scar. Not only women, but men also object to a scar on the face. No matter how inconspicuous the scar is, it is always visible. At times this linear vertical scar contracts and pulls down the punctum more or less, and at times part of the eyelid along with it.

The problem of dacryocystitis is the concern of the nose and throat specialist as well as the eye specialist.

AMERICAN ALLERGY FUND GRANTS

The American Allergy Fund, a national, nonprofit organization for the advancement of medical knowledge which was founded a little more than a year ago, has announced the availability of its first grants-in-aid for scientific research. Grants for one year in amounts not to exceed $3,500, renewable if progress warrants continuation, will be made to investigators in the biological sciences, medical and nonmedical. Preference will be given to problems with immediate relationship to allergy, although investigations in physiology, biochemistry, pharmacology, immunology, genetics, and other basic sciences are solicited. The fund is supported by the annual membership of physicians who specialize in allergy, their patients, and public spirited individuals and industries. Further information is available from S. S. Kalwary, Executive Secretary, 525 Erie Building, Cleveland 15.

RHEUMATIC FEVER LIBRARY

The University of Colorado School of Medicine, Denver, has established a Rheumatic Fever Library in which it is hoped to assemble all that has been written on the subject of rheumatic fever in reprint, photostat, or typewritten form. Publications from outside the United States will be included and translated if necessary. The material will be cross-indexed and will ultimately be available to all workers in the field in the form of photostats or abstracts. The Library, made possible through the financial assistance of the Ladies Auxiliary of the Rocky Mountain Screen Club and the services of volunteer workers under the direction of the Denver Area Rheumatic Fever Diagnostic Service, will welcome contributions of papers on rheumatic fever.

MISCELLANEOUS

COMING MEETINGS AND CLINICS

State Medical Association of Texas, Houston, April 26-29, 1948. Dr. B. E. Pickett, Sr., Carrizo Springs, President; Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

American Medical Association, House of Delegates, Cleveland, January 5-6, 1948; Special Scientific Session, Cleveland, January 7-8, 1948; Regular General Session, Chicago, June 21-25, 1948. Dr. Edward L. Bortz, Philadelphia, President; Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

NATIONAL AND REGIONAL

American Academy of Allergy, St. Louis, December 15-17, 1947. Dr. Will C. Sprain, New York, President; Dr. Theodore L. Squier, 424 East Wisconsin Ave., Milwaukee, Secretary.

American Academy of Dermatology and Syphilology, Chicago, December 6-11, 1947. Dr. Edward A. Oliver, Chicago, President; Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo. N. Y., Secretary.

American Academy of Neurological Surgery. Dr. William S. Keith, Toronto, Canada, President; Dr. T. C. Erickson, 1300 University Ave., Madison 5, Wis., Secretary.

American Academy of Ophthalmology and Otolaryngology. Dr. Alan C. Woods, Baltimore, President; Dr. W. L. Benedict, Mayo Clinic, Rochester, Minn., Secretary.

American Academy of Pediatrics, Dallas, December 8-11, 1947. Dr. Lee F. Hill, Des Moines, Iowa, President; Dr. C. G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association for Thoracic Surgery, Quebec, 1948. Dr. Alton Ochsner, New Orleans, President; Dr. Brian Blades, George Washington University School of Medicine, Washington, D. C., Secretary.

American Association of Genito-Urinary Surgeons. Dr. C. E. Burford, St. Louis, President; Dr. Norris J. Heckel, 122 S. Michigan Ave., Chicago, Secretary.

American Association of Obstetricians, Gynecologists, and Abdominal Surgeons. Dr. A. D. Campbell, Montreal, President; Dr. J. R. Bloss, 418 11th St., Huntington 1, W. Va., Secretary.

American College of Physicians, San Francisco, April 19-23, 1948. Dr. Hugh J. Morgan, Nashville, Tenn., President; Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Secretary.

American College of Radiology, Chicago, June 19-20, 1948. Dr. Edwin C. Ernst, St. Louis, President; Dr. Mac F. Cahal, 20 N. Wacker Drive, Chicago 6, Secretary.

American College of Surgeons. Dr. Irvin Abell, Louisville, Ky., President; Dr. Paul B. Magnuson, 40 E. Erie St., Chicago 11, Secretary.

American Congress of Physical Medicine. Dr. O. Leonard Huddleston, Los Angeles, President; Dr. Richard Kovacs, 2 E. 88th St., New York 28, Secretary.

American Dermatological Association. Dr. Paul A. O'Leary, Rochester, Minn., President; Dr. Harry R. Foerster, 208 E. Wisconsin Ave., Milwaukee, Secretary.

American Gastro-Enterological Association, Atlantic City, May 31-June 1. Dr. Henry L. Bockus, Philadelphia; Dr. Dwight L. Wilbur, 655 Sutter St., San Francisco, Secretary.

American Gynecological Society. Dr. Edmund A. Schumann, Philadelphia, President; Dr. Howard Taylor, Jr., 842 Park Ave., New York 21, Secretary.

American Hospital Association. Mr. Graham L. Davis, Battle Creek, Mich., President; Mr. George P. Bugbee, 18 E. Division St., Chicago, Executive Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, April 7-9, 1948. Dr. Lyman G. Richards, Brookline, Mass., President; Dr. C. S. Nash, 277 Alexander St., Rochester 7, N. Y., Secretary.

American Neurological Association. Dr. George Wilson, Philadelphia, President; Dr. H. Houston Merritt, Montefiore Hospital, New York 67, Secretary.

American Ophthalmological Society, Hot Springs, Va., May 16-19, 1948. Dr. Henry C. Haden, Houston, President; Dr. W. S. Atkinson, 129 Clinton St., Watertown, N. Y., Secretary.

American Orthopedic Association. Dr. Robert I. Harris, Toronto, Canada, President; Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

American Otological Society. Dr. B. J. McMahon, St. Louis, President; Dr. Gordon D. Hoople, 713 E. Genesee St., Syracuse 3, N. Y., Secretary.

American Pediatric Society. Dr. Grover F. Powers, New Haven, Conn., President; Dr. Henry G. Poncher, 1819 W. Polk St., Chicago 12, Secretary.

American Proctologic Society, Chicago, June, 1948. Dr. George H. Thiele, Kansas City, Mo., President; Dr. Vernon G. Jeurink, 1612 Tremont Pl., Denver 2, Secretary.

American Psychiatric Association, Portland, Ore., May 9-14, 1948. Dr. Winfred Overholser, Washington, D. C., President; Dr. Leo H. Bartemeier, General Motors Bldg., Detroit, Secretary.

American Public Health Association. Dr. Harry S. Mustard, New York, President; Dr. R. M. Atwater, 1790 Broadway, New York 19, Secretary.

American Roentgen Ray Society. Dr. Raymond C. Beeler, Indianopolis, President; Dr. H. Dabney Kerr, University Hospital, Iowa City, Secretary.

American Society of Anesthesiologists, New York, December 4-5, 1947. Dr. Edward B. Tuohy, Rochester, Minn., President; Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 22, Secretary.

American Society of Clinical Pathologists. Dr. Stanley P. Reimann, Philadelphia, President; Dr. A. S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

American Surgical Association. Dr. Elliott C. Cutler, Boston, President; Dr. W. M. Firor, Johns Hopkins Hospital, Baltimore 5, Secretary.

American Urological Association, Boston, May 17-20, 1948. Dr. Charles McMartin, Omaha, Neb., President; Dr. T. D. Moore, 899 Madison Ave., Memphis 3, Tenn., Secretary.

Association of American Physicians, Atlantic City, May 4-5, 1948. Dr. A. H. Gordon, Montreal, President; Dr. H. M. Thomas, Jr., 1201 N. Calvert St., Baltimore 2, Secretary.

Central Neuropsychiatric Association, Kansas City, Fall, 1948. Dr. William C. Menninger, Topeka, Kan., President; Dr. Lee Eaton, Mayo Clinic, Rochester, Minn., Secretary.

International College of Surgeons, U. S. Chapter. Dr. Herbert Acuff, Knoxville, Tenn., President; Dr. Louis J. Gariepy, 16401 Grand River Ave., Detroit 27, Secretary.

National Tuberculosis Association. Dr. James R. Reuling, Bayside, N. Y., President; Dr. H. Stuart Willis, 1790 Broadway, New York 19, Secretary.

Radiological Society of North America, Boston, November 30-December 5, 1947. Dr. Lowell S. Goin, Los Angeles, President; Dr. D. S. Childs, Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Southern Medical Association, Baltimore, November 24-26, 1947. Dr. E. L. Henderson, Louisville, Ky., President; C. P. Loranz, Empire Building, Birmingham, Ala., Secretary-Manager.

Southern Psychiatric Association. Dr. Newdigate M. Owensby, 384 Peachtree St. N. E., Atlanta, Ga., Secretary.

Southern Surgical Association, Hollywood, Fla., December 9-11, 1947. Dr. Frank S. Johns, Richmond, Va., President; Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Southwest Allergy Forum, Oklahoma City, Okla., April 5-6, 1948. Dr. Herbert J. Rinkel, Kansas City, Mo., President; Dr. Fannie Lou Leney, 1200 N. Walker, Oklahoma City, Okla., Secretary.

Southwest Medical Association, Phoenix, Ariz., November 6-8, 1947. Dr. Leslie M. Smith, El Paso, President; Dr. Louis W. Breck, 520 Montana St., El Paso, Secretary.

STATE

Texas Association of Medical Anesthetists, Houston, April 26-29, 1948. Dr. Robert A. Miller, San Antonio, President; Dr. Harvey C. Slocum, 928 Strand, Galveston, Secretary.

Texas Association of Obstetricians and Gynecologists, Fort Worth, November 21-22, 1947. Dr. J. E. Kanatser, Wichita Falls, President; Dr. Julius McIver, 714 Medical Arts Building, Dallas, Secretary.

Texas Chapter, American College of Chest Physicians, Houston, April 26-29, 1948. Dr. H. Frank Carman, Dallas, President; Dr. Charles J. Koerth, Kerrville, Secretary.

Texas Club of Internists. Dr. N. D. Buie, Marlin, President; Dr. Victor E. Schulze, San Angelo, Secretary.

Texas Hospital Association, Dallas, March 4-6, 1948. Mr. Thomas H. Head, San Angelo, President; Mrs. Ruth Barnhart, 2210 Main St., Dallas, Secretary.

Texas Neuropsychiatric Association, Terrell, Fall, 1947. Dr. A. Hauser, Houston, President; Dr. David Wade, 604 Capital National Bank Bldg., Austin, Secretary.

Texas Orthopedic Society, Houston, April 26-29, 1948. Dr. Walter Stuck, San Antonio, President; Dr. Ruth Jackson, 3629 Fairmount St., Dallas, Secretary.

Texas Pediatric Society, Business Meeting, Dallas, December, 1947. Dr. C. B. Alexander, San Antonio, President; Dr. John E. Ashby, 3610 Fairmount, Dallas, Secretary.

Texas Public Health Association, Houston, February, 1948. Dr. S. W. Bohls, San Antonio, President; Mr. Earle W. Sudderth, Dallas County Health Department, Court House, Dallas, Secretary.

Texas Radiological Society, Temple, January 17, 1948. Dr. C. A. Stevenson, Temple, President; Dr. R. P. O'Bannon, 650 Fifth Ave., Fort Worth, Secretary.

Texas Railway and Traumatic Surgical Association, Houston, April 26-29, 1948. Dr. Linwood H. Denman, Lufkin, President; Dr. Ross Trigg, First National Bank Bldg., Fort Worth, Secretary.

Texas Society for Mental Hygiene, El Paso, March 11-13, 1948. Dr. Ozro T. Woods, Dallas, President; Mrs. Elizabeth F. Gardner, 1617 Watchhill Road, Austin 21, Executive Secretary.

Texas Society of Gastroenterologists and Proctologists, Houston, April 26-29, 1948. Dr. George Underwood, Dallas, President; Dr. Carl Giesecke, 1602 Nix Professional Bldg., San Antonio, Secretary.

Texas Society of Ophthalmology and Otolaryngology, Houston, December 5-6, 1947. Dr. W. E. Vandevere, El Paso, President; Dr. E. D. Dumas, 425 Medical Arts Bldg., San Antonio, Secretary.

Texas Society of Pathologists, Galveston, January 25, 1948. Dr. D. A. Todd, San Antonio, President; Dr. C. T. Ashworth, Southwestern Medical College, Dallas, Secretary.

Texas State Heart Association, Houston, April 26-29, 1948. Dr. DeWitt Neighbors, Fort Worth, President; Dr. Merritt B. Whitten, 1421 Medical Arts Bldg., Dallas, Secretary.

Texas State Urological Society, Dallas, February 2, 1948. Dr. Jo C. Alexander, Dallas, President; Dr. Hub Isaacks, Medical Arts Bldg., Fort Worth, Secretary.

Texas Surgical Society, Fort Worth, April, 1948. Dr. G. W. N. Eggers, Galveston, President; Dr. Truman G. Blocker, University of Texas Medical Branch, Galveston, Secretary.

Texas Tuberculosis Association. F. K. Dougharty, Liberty, President; Miss Pansy Nichols, 700 Brazos, Austin, Executive Secretary.

DISTRICT

Second. Big Spring, District Society. Dr. R. B. G. Cowper, Big Spring, President; Dr. H. A. Briggs, Midland, Secretary.

Third, Panhandle, District Medical Society. Dr. C. E. High, Pampa, President; Dr. Kenneth Flamm, Amarillo, Secretary.

Fourth District Society, Ballinger. Dr. J. C. Young, Coleman, President; Dr. Charles F. Bailey, Ballinger, Secretary.

Fifth and Sixth Districts Society. Dr. Kleberg Eckhardt, Corpus Christi, President; Dr. Charles Tennison, Nix Professional Building, San Antonio, Secretary.

Seventh, Austin, District Society, Spring, 1948. Dr. M. I. Brown, Austin, President; Dr. David Wade, 604 Capital National Bank Bldg., Austin, Secretary.

Eighth, Ninth and Tenth Districts, South Texas, Society. Dr. T. O. Woolley, Orange, President; Dr. James Greenwood, Jr., 518 Medical Arts Bldg., Houston 2, Secretary.

Eleventh District Society. Dr. L. L. Travis, Jacksonville, President; Dr. C. B. Young, 929 S. Confederate, Tyler, Secretary.

Twelfth, Central Texas, District Society, Waco, January 13, 1948. Dr. W. Howard Wells, Waco, President; Dr. H. F. Connally, Jr., Amicable Bldg., Waco., Secretary.

Thirteenth, Northwest District Society, Mineral Wells, November 11, 1947. Dr. Frank Hodges, Abilene, President; Dr. A. D. Roberts, Medical Arts Bldg., Fort Worth, Secretary.

Fourteenth District Society, Dallas, December 9, 1947. Dr. H. Frank Carman, Dallas, President; Dr. James Jeter, Ennis, Secretary.

Fifteenth, Northeast, District Society, Daingerfield, Fall, 1948. Dr. W. S. Terry, Jefferson, President; Dr. James Harris, Marshall, Secretary.

CLINICS

Dallas Southern Clinical Society, Dallas, March 15-18, 1948. Miss Thelma J. Webb, Medical Arts Bldg., Dallas 1, Executive Secretary.

International Postgraduate Medical Assembly of Southwest Texas, San Antonio, January 27-29, 1948. Dr. W. W. Bondurant, Jr., 711 E. Houston St., San Antonio, President.

Oklahoma City Clinical Society, Oklahoma City, October 27-30, 1947. Executive Secretary, 512 Medical Arts Bldg., Oklahoma City.

Post Graduate Medical Assembly of South Texas, Houston, December 1-3, 1947. Secretary, 229 Medical Arts Bldg., Houston.

SOUTHERN TUBERCULOSIS CONFERENCE

Physicians and laymen concerned with tuberculosis control in sixteen states attended the Southern Tuberculosis Conference in Houston, October 2-4, report the Houston *Press* and *Chronicle*. The Southern Trudeau Society and the executive committee of the National Tuberculosis Association also met. Among leaders who participated in the program were Dr. Francis J. Weber, Washington, D. C., medical director of the tuberculosis council division of the U. S. Public Health Service; Dr. H. McLeod Riggins, New York City researcher in streptomycin; and Dr. Julius L. Wilson, New Orleans, president of the Southern Conference.

Announcement was made at the meeting of the resignation of Dr. Kendall Emerson as managing director of the National Tuberculosis Association, effective January 1, 1948. Dr. Emerson, who has held the position since 1928, will be succeeded by Dr. James E. Perkins, deputy commissioner of the New York State Department of of Health.

CENTRAL NEUROPSYCHIATRIC ASSOCIATION

The Central Neuropsychiatric Association, membership for which is drawn from approximately thirty states, met October 17-18 in Galveston for a program given largely by Texas physicians. Dr. Jack R. Ewalt, Galveston, outgoing vice-president, was largely responsible for arrangements locally.

In addition to scientific papers and discussions of mental health and neuropsychiatry in the Southwest, visiting physicians inspected the neuropsychiatric facilities at the University of Texas School of Medicine and were entertained with a cruise up Galveston Bay and the Houston Ship Channel to the San Jacinto Inn, where dinner was served.

The association voted to meet in 1948 in Kansas City. Dr. William A. Menninger, Topeka, Kan., was elected president.

TEXAS SURGICAL SOCIETY

The Texas Surgical Society at its fall semi-annual meeting in Galveston, October 6-7, elected the following fellows: Drs. G. V. Brindley, Jr., Temple; John J. De Leon, San Antonio; Howard R. Dudgeon, Jr., Waco; E. B. Lewis, Houston; Harry B. Macey, Temple; William F. Mengert, Dallas; Carl A. Moyer, Dallas; Harry Spence, Dallas; Robert M. Tenery, Waxahachie; Leroy Trice, Palestine; and Raleigh R. White, Temple.

The scientific program was as follows:

October 6

Surgical Treatment of Esophageal Lesions—Dr. Howard T. Barkley, Houston.

Type 3B Congenital Atresia of the Esophagus with Esophageal Fistula—Dr. Joe White, Fort Worth.

Fat Necrosis of the Breast, Case Report—Dr. John T. Moore, Houston.

Nipple Secretions, A Method of Detecting Precancerous Lesions of the Breast—Dr. Dudley Jackson, San Antonio.

Hemolysis During Transurethral Resection of the Prostate—Dr. Harold O'Brien, Dallas.

Vesicovaginal Fistula (slides)—Dr. B. Weems Turner, Houston.

Perforating Peptic Ulcer in the Female—Dr. Harriss Williams, Austin.

Abdominal Lymphangioma—Dr. G. V. Brindley, Sr. and (by invitation) Dr. G. V. Brindley, Jr., Temple.

Consideration of the Management of Abdominal Trauma—Survey of Recent Developments—(guest) Dr. David Henry Poer, Emory University, Atlanta, Ga.

Perforating Foreign Body of the Cecum, Case Report—Dr. Paul W. Best, Houston.

Fecolith of the Large Intestine Causing Obstruction Simulating Cancer—Dr. Hugh C. Welsh, Houston.

Surgical Service of the Nonteaching Hospital: Need for Rigid Supervision—Dr. W. B. Russ, San Antonio.

October 7

(Program by residents of John Sealy Hospital, Galveston.)

Biliary-Intestinal Anastomosis—(by invitation) Dr. H. E. Griffin.

Operative Mortality in Perforated Peptic Ulcer—(by invitation) Dr. F. F. Rogers.

Synovial Tumors of the Knee Joint—(by invitation) Dr. William H. Ainsworth.

Recent Concepts in the Psysio-Pathology of Lower Nephron Nephrosis—(by invitation) Dr. G. M. Coffman, Galveston.

Prefrontal Lobotomy—(by invitation) Dr. J. P. McNeil.

Refinements in Harelip Repair—(by invitation) Dr. J. H. Hendrix.

Officers who will serve during the coming year include Drs. G. W. N. Eggers, Galveston, president; E. P. Bunkley, Stamford, first vice-president; J. E. Clark, Houston, second vice-president; T. G. Blocker, Jr., Galveston, reelected secretary; and C. B. Carter, Dallas, reelected treasurer.

The society voted to hold its spring meeting in April, 1948, in Fort Worth.

Drs. G. W. N. Eggers, T. G. Blocker, Jr., and R. M. Moore, Galveston, comprised the local arrangements committee. A buffet supper, cocktail party, and formal dinner were entertainment features.

GASTROENTEROLOGICAL CONTEST

The National Gastroenterological Association has announced its prize contest for 1948, in which $100 and a certificate of merit will be given for the best unpublished contribution on gastroenterology or allied subjects.

All entries should be limited to 5,000 words, be typewritten in English, prepared in manuscript form, submitted in five copies, accompanied by an entry letter, and must be received not later than

April 1, 1948. Entries should be addressed to the National Gastroenterological Association, 1819 Broadway, New York 23.

UNIVERSITY OF TEXAS COURSES

Details concerning two University of Texas postgraduate courses have been released. A tumor course in cooperation with the Texas State Department of Health will be held November 12-15, and a conference on general medicine is scheduled for the first two weeks in December.

Special guest speakers for the tumor course, which will emphasize tumors of the female genital organs and breast, include Drs. Axel N. Arneson, associate professor of clinical obstetrics and gynecology, Washington University School of Medicine, St. Louis; Malcolm B. Dockerty, consultant surgical pathologist, Mayo Clinic, Rochester, Minn.; Joseph Farrow, associate attending surgeon, Memorial Hospital, New York; and Herbert E. Schmitz, professor of gynecology and obstetrics, Loyola University School of Medicine, Chicago. Visiting Texas speakers will be Drs. E. W. Bertner, professor of gynecology, Baylor University College of Medicine, Houston; Leslie M. Garrett, Corpus Christi; Dudley Jackson, San Antonio; W. F. Mengert, professor of obstetrics and gynecology, Southwestern Medical College, Dallas; Clarence P. Oliver, professor of zoology, University of Texas, Austin; Charles Phillips, Temple; D. A. Todd, San Antonio; Stuart A. Wallace, professor of pathology, Baylor University College of Medicine, Houston; and John D. Weaver, assistant professor of obstetrics and gynecology, University of Texas School of Medicine, on assignment to gynecologic investigations of patients in state eleemosynary institutions, Austin. Eleven University of Texas Medical Branch staff members will also participate.

The conference on general medicine will feature two physicians from the National Institute of Cardiology at Mexico City, Dr. Demetrio Sodi y Pallares, chief of the electrocardiographic service, and Dr. Teofilo Ortiz y Ramirez, chief of the roentgenological service. In addition, according to the Galveston *Tribune*, thirty Medical Branch staff members will participate, as will the following: Drs. Edgar Van N. Allen, Mayo Foundation, Rochester, Minn.; John B. Barnwell, Veterans Administration, Washington, D. C.; Russell S. Boles, University of Pennsylvania; Dr. George E. Burch, Tulane University; Edwin C. Hamblen, Duke University; Carl C. Moore, Washington University; Alton Ochsner, Tulane University; Mayo H. Soley, University of California; Willard O. Thompson, University of Illinois; Henry Turner, University of Oklahoma; Frederick A. Willius, University of Minnesota; Henry W. Winans, Southwestern Medical School; and Maxwell M. Winntrobe, University of Utah.

TUBERCULOSIS COURSE

The State Sanatorium refresher course in diagnosis and treatment of lung tuberculosis, conducted annually, will be held the week beginning November 17, Dr. J. B. McKnight, superintendent, has announced. Eight or more Texas physicians can be accommodated for the course and will be guests of the Sanatorium at its cottage reserved for visiting physicians.

The postgraduate course will include practically all phases of the diagnosis and treatment of primary and reinfection tuberculosis. Considerable time will be given to roentgen-ray study and interpretation, artificial pneumothorax, thoracic surgery, physical examination, tuberculin skin testing, and visitation of wards. One day will be devoted to major chest surgery, with observation of the first and second stages of thoracoplasty performed at the Shannon West Texas Memorial Hospital in San Angelo.

TULANE UNIVERSITY COURSES

Short review courses in a variety of medical subjects have been announced by Tulane University School of Medicine for the 1947-1948 session. Detailed information from the Director, Division of Graduate Medicine, 1430 Tulane Avenue, New Orleans 13, may be obtained on the following courses: pediatrics, November 17-21; electrocardiography, January 5-17; gynecology, January 5-10; obstetrics, January 12-17; internal medicine, January 18-31; gastroenterology, March 1-6; pediatrics (for specialists), March 8-12; general surgery, March 15-20.

UROLOGY AWARD

The American Urological Association is offering $1,000 (first prize, $500; second, $300; and third, $200) for essays on the result of clinical or laboratory research in urology. Competition is limited to urologists who have been in such specific practice for not more than five years and to residents in urology in recognized hospitals.

Full particulars may be secured from the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tenn. Essays must be in his hands before March 1, 1948.

MATERNAL DEATHS FROM HEMORRHAGE

Although hemorrhage "outranks all other single causes of maternal death in the United States," John Totterdale Cole, M. D., in the September 20 issue of *The Journal of the American Medical Association*, reports that since the method of blood replacement now used at the Woman's Clinic of the New York Hospital has been adopted there has not been a single death from hemorrhage during 7,500 gynecologic operations. On the obstetric service only one death from this cause has occurred during 14,000 deliveries.

Among the practices of the Clinic which he emphasizes are:

Determination of the blood group and the Rh type of all patients at their first "before delivery" visit.

Cross matching of the blood of all patients before delivery if it appears that a large loss of blood may occur. One or more pints of blood will then be held on call for immediate use at the central blood bank —or, in case of cesarean section, in the operating room itself.

Measuring the patient's loss of blood as it occurs, so that it will not be underestimated.

When hemorrhage has occurred, shortening the duration of anesthesia by avoiding surgical procedures which can be postponed.

Keeping a small obstetric blood bank for emergencies on the delivery floor itself in addition to the large, active, general blood bank. The blood in the small bank should be of a type which may be used for any patient without preliminary typing or cross matching.

When an exceedingly large volume of blood has been lost, rapid replacement by a simple pressure mechanism added to the ordinary transfusion apparatus. In such cases the drip method of transfusion is too slow.

The administration of alkali agents to combat transfusion reactions and to delay the onset of irreversible shock until enough blood and plasma are available.

PATHOLOGY LABORATORY ESTABLISHED

Establishment of a central laboratory for pathology in Washington, D. C., in cooperation with the Army Institute of Pathology, has been announced by the Veterans Administration. The laboratory will provide a consultation, review, and diagnostic service in pathologic tissues for the 126 hospitals

and other medical facilities of the Veterans Administration, and will cooperate with the Army, civilian medical societies, and others in maintaining a central file of pathologic anatomy and related records for reference, research, training, and long-range follow-up programs.

LIBRARY NOTES

PACKAGE SERVICE

The package library consists of collections of reprints and other periodical material on various subjects, prepared for lending to members of the Association. Requests for packages should be addressed "Library, State Medical Association of Texas, 1404 W. El Paso Street, Fort Worth 3, Texas." Twenty-five cents in stamps should be enclosed with the request to cover postage and part of the expense of collecting the material. Packages are allowed to remain in the hands of the borrower for 14 days.

ACCESSIONS

The following additions were made to the Library during October:

Reprints received, 981.

Journals received, 229.

Chicago, Year Book Publishers—Moench: Headache.

St. Louis, C. V. Mosby—Litzenberg: Synopsis of Obstetrics, third edition; Top: Communicable Diseases, second edition; Schaub and Foley: Diagnostic Bacteriology, second edition.

Saint Paul, Bruce Publishing Company—Erskine: Practical X-Ray Treatment, third edition.

New York, Philosophical Library—Runes: The Selected Writings of Benjamin Rush.

Philadelphia, W. B. Saunders Company—Bastedo: Pharmacology, Therapeutics and Prescription Writing, fifth edition; Adler: Gifford's Textbook of Ophthalmology, fourth edition; Wechsler: Textbook of Clinical Neurology, sixth edition.

Chicago, Research Publications of Chicago—Hirsch: Sex Power in Marriage.

Philadelphia, The Blakiston Company—Strecker, Ebaugh, and Ewalt: Practical Clinical Psychiatry, sixth edition.

SUMMARY OF SERVICE

Local users, 60.	Borrowers by mail, 44.
Items consulted, 290.	Packages mailed, 49.
Items taken out, 294.	Items mailed, 516.

Total number of articles consulted and loaned, 1,100.

MOTION PICTURE FILM LIBRARY

Motion picture films on medical subjects, 16 mm., both silent and sound, some in color, and suitable for either medical or lay audiences, are available for loan to county medical societies, hospital staffs, or individual physicians, on request. Borrowers will be required to pay only the cost of shipment of the films, by express, with insurance, and for any damage to films while in the hands of the borrower.

Requests for films should be addressed to "Motion Picture Film Library, State Medical Association of Texas, 1404 West El Paso Street, Fort Worth 3, Texas." A list of available films, with descriptions, will be furnished on request.

The following motion picture films were loaned by the Film Library of the State Medical Association of Texas during October:

Accent on Use (Available through the courtesy of National Foundation for Infantile Paralysis, New York)—The Dallas Health Museum, Dallas.

Anemia, Folvite in the Treatment (Available through the courtesy of Lederle Laboratories, Inc., New York)—Scott & White Clinic, Temple.

Anemias (Available through the courtesy of Lederle Laboratories, Inc., New York)—Scott & White Clinic, Temple.

Anesthesia, Regional (Available through the courtesy of Winthrop Chemical Company, New York)—Dr. William R. Berk, Dallas.

Appendicitis in Childhood (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Smith County Medical Society, Tyler, and Dallam-Hartley-Sherman-Moore Counties Medical Society, Dalhart.

Appraisal of the Newborn (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Dallas Health Museum, Dallas.

As Others See Us (Available through the courtesy of the American Hospital Association, Chicago)—School of Nursing, Scott & White Hospital, Temple.

Back to Normal (Available through the courtesy of British Information Services, Houston)—Sorosis Club, Fort Worth.

Behind the Shadows (Available through the courtesy of Texas Tuberculosis Association, Austin)—Dallas Health Museum, Dallas.

Blood Transfusion (Available through the courtesy of British Information Services, Houston)—School of Nursing, Scott & White Hospital, Temple.

Blood Transfusion, Technique (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—School of Nursing, Scott & White Hospital, Temple.

Breech Extraction (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Dr. William R. Berk, Dallas; Dr. C. D. Gipson, Three Rivers; and Brooks-Duval-Jim Wells Counties Medical Society, Alice.

Caesarean Section (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Dr. J. O. S. Holt, Jr., Dallas, and Dallam-Hartley-Sherman-Moore Counties Medical Society, Dumas.

Chest Diseases, Surgery (Available through the courtesy of British Information Services, Houston.)—Dr. William R. Berk, Dallas; Angelina County Medical Society, Lufkin; and Bee-Live Oak-McMullen Counties Medical Society, Three Rivers.

Choose to Live (Available through the courtesy of the U. S. Public Health Service and the American Society for the Control of Cancer, Washington)—Dallas Health Museum, Dallas.

D. D. T. (Available through the courtesy of the British Information Services, Houston)—Sorosis Club, Fort Worth.

Diphtheria and Croup (Available through the courtesy of Lederle Laboratories, Inc., New York)—Scott & White Clinic, Temple.

Eyes for Tomorrow (Available through the courtesy of the Hurst Eye, Ear, Nose and Throat Hospital-Clinic, Longview)—Dallas Health Museum, Dallas.

Eyes, Your Children's (Available through the courtesy of the British Information Services, Houston)—Dallas Health Museum, Dallas, and Dr. C. D. Gipson, Three Rivers.

From Moo to You (Available through the courtesy of the Borden Company, New York)—Dallas Health Museum, Dallas.

Gastrectomy (Available through the courtesy of Billy Burke Productions, Hollywood, Calif.)—Dallam-Hartley-Sherman-Moore Counties Medical Society, Dalhart, and Gray-Wheeler Counties Medical Society, Pampa.

Human Fertility (Available through the courtesy of Ortho Products, Inc., Linden, N. J.)—Brooks-Duval-Jim Wells Counties Medical Society, Alice, and Pecos-Jeff Davis-Presidio-Brewster Counties Medical Society, Alpine.

In Defense of a Nation (Available through the courtesy of the American Social Hygiene Association, New York)—Dr. William R. Berk, Dallas.

Immunization Against Infectious Disease (Available through the courtesy of Lederle Laboratories, New York)—Gipson Hospital, Three Rivers.

Infantile Paralysis, Your Fight Against (Available through the courtesy of the National Foundation for Infantile Paralysis, New York)—Dallas Health Museum, Dallas.

Injuries, Athletic Type, Care and Prevention (Available through the courtesy of Becton, Dickinson & Co., Rutherford, N. J.)—Dallam-Hartley-Sherman-Moore Counties Medical Society, Dumas.

Know for Sure (Available through the courtesy of Texas State Board of Health, Austin)—Dr. William R. Berk, Dallas.

Malaria (Purchased by the Library, State Medical Association)—Smith County Medical Society, Tyler.

Oxygen Therapy in Heart Disease (Available through the courtesy of Linde Air Products Company, New York)—Bee-Live Oak-McMullen Counties Medical Society, Three Rivers.

Parkinsonism (Available through the courtesy of Lederle Laboratories, Inc., New York)—Scott & White Hospital-Clinic, Temple.

Stitch in Time (Available through the courtesy of the American Medical Association, Chicago)—Parent-Teachers Association, Clifton.

Tuberculosis, Diagnostic Procedures in (Available through the courtesy of the Texas Tuberculosis Association, Austin)—Dr. C. D. Gipson, Three Rivers.

Thoracic Surgery (Available through the courtesy of British Information Services Houston)—Dr. William R. Berk, Dallas.

Time is Life (Available through the courtesy of American Cancer Society, Inc., New York)—Dallas Health Museum, Dallas.

Traitor Within (Available through the courtesy of the American Cancer Society, Inc., New York)—Sorosis Club, Fort Worth, and Dallas Health Museum, Dallas.

Trichomonas Vaginalis (Available through the courtesy of Dr. Karl J. Karnaky, Houston)—Brooks-Duval-Jim Wells Counties Medical Society, Alice.

Uterosalpingography (Available through the courtesy of E. Fougera & Company, New York)—Dr. William R. Berk, Dallas.

Varicose Veins and Their Complications (Available through the courtesy of Becton, Dickinson & Co., Rutherford, N. J.)—Pecos-Jeff Davis-Presidio-Brewster Counties Medical Society, Alpine, and Gray-Wheeler Counties Medical Society, Pampa.

You Are the Switchman (Available through the courtesy of American Cancer Society, New York)—Dallas Health Museum, Dallas.

Films distributed through the courtesy of the War Department as follows:

The Army Nurse, Field Hospitals, General Hospital, Strictly Personal, and *Ward Care of Psychotic Patients*—Scott & White Hospital, Temple.

Let There Be Light—Dr. F. O. McGehee, Houston.

Neurosurgery in Overseas Hospital, Convalescent Care and Rehabilitation of Patients with Spinal Cord Injury, and *Let There Be Light*—Dr. William R. Berk, Dallas.

NEW MOTION PICTURE FOR THE FILM LIBRARY

The Motion Picture Film Library of the State Medical Association has received the following film, which is available for loan upon request.

Nutrition in Wound Healing. 16 mm., sound, color, running time 30 minutes. (Available through the courtesy of the California Fruit Growers Exchange, Los Angeles.) This film is the compilation of the study of many scientists, working under a fellowship from the California Fruit Growers Exchange, Los Angeles. It shows the relation that exists between vitamins C and P and wound healing and muscle strength. Technically and photographically, it is excellent for professional audiences.

LIBRARY NEEDS

The journals listed are needed by the Library of the State Medical Association to complete volumes for binding. Any of these numbers will be acceptable either as a gift or for purchase. It is preferable that the Library, 1404 West El Paso Street, Fort Worth 3, be notified regarding items available, and the prices of such items, if any, before shipment is made.

Journals needed by the Library of the State Medical Association are as follows:

New England Journal of Medicine, Vol. 232, Nos. 12, 15 (April 12, March 22) 1945; Vol. 234, No. 4 (Jan. 24) 1946; Vol. 235, No. 3 (July) 1946.

Journal of Pediatrics, Vol. 18, No. 3 (March) 1941; Vol. 19, Nos. 2, 3 (Aug., Sept.) 1941; Vol. 30, No. 6 (June) 1947.

BOOK REVIEWS

[1]**Tuberculosis As It Comes and Goes.** By Edward W. Hayes, M. D., F. A. C. P., Associate Professor of Tuberculosis, College of Medical Evangelists, Los Angeles, with chapters by Laurence de Rycke, Ph. D. Cloth, 220 pages. Second edition. Price, $3.75. Springfield, Charles C. Thomas, Publisher, 1947.

This monograph was first published by Dr. Hayes in 1943 and revised in 1947. The author has presented the subject so simply and understandably that anyone can capture the whole problem of tuberculosis, its control and treatment, with little reading effort. The long and rich experience of the author as a patient, physician, and teacher increases the authenticity of his writing. He deals with each factor in logical sequence.

Although the monograph was conceived and prepared for patients, Dr. Hayes has set forth the important factors of the tuberculosis problem which every physician and tuberculosis worker should understand. His view of the various steps in diagnosis is an excellent guide for all physicians. His presentation of the value of rest and the other modern forms of treatment are dealt with in the same clear, concise way characteristic of a good teacher. The illustrations are valuable and are typical of the simplicity of the whole book.

There are two short chapters by Laurence de Rycke, Ph. D. One chapter is entitled "Suggestions to Patients"; the other "Suggestions to Visitors." These two chapters are a valuable contribution by a learned man who, though a layman, has grasped the importance of the psychosomatic aspects of chronic pulmonary tuberculosis. In these two chapters, he points out the importance of the little things, the unavoidable factors of everyday life, and how they can be met with the help of the physician.

This monograph is a gem among the many books dealing with tuberculosis. It should be in the hands of every general practitioner and is a *must* for the tuberculosis worker and the patient.

[2]**Principles and Practice of Obstetrics.** By Joseph B. DeLee, M. D., Late Professor of Obstetrics and Gynecology, the University of Chicago, and J. P. Greenhill, M. D., Attending Obstetrician and Gynecologist, the Michael Reese Hospital. Ninth edition, with 1108 illustrations on 860 figures, 211 in color. Cloth, 1,011 pages. Price, $10.00. Philadelphia and London, W. B. Saunders Company, 1947.

In appearance, this is an excellent book. The new two column format makes it easy to read. New chapters have been added, others rewritten, and a few omitted. The host of obstetrical illustrations recommends the book. The clear and accurate draw-

[1]Reviewed by C. M. Hendricks, M. D., El Paso.
[2]Reviewed by William F. Rumpf, M. D., Dallas.

ings of female anatomy by Curtis, Anson, and Ashley are worthy additions.

DeLee presents his personal experience and adds editorial opinions of others on controversial topics to make his book a reference volume. Each edition becomes less an encyclopedia of obstetrics, as envisioned by DeLee, and assumes more the personality of Greenhill. However, an excellent and complete bibliography to substantiate Greenhill's views accompanies each chapter.

Fundamentally, the Chicago group of obstetricians represents a more dramatic and a somewhat less conservative school of thought than that found in some other parts of the country. The book is recommended to discriminating readers on the basis that it represents primarily the obstetrical principles and practices of Dr. Greenhill.

[3]**Modern Dermatology and Syphilology.** By S. William Becker, M. D., Clinical Professor of Dermatology, University of Chicago, and Maxmillian E. Obermayer, M. D., Clinical Professor and Chairman of the Department of Dermatology, University of Southern California. Second edition. Cloth, 1,017 pages. Price, $18.00. Philadelphia, J. B. Lippincott Company, 1947.

This is one of the most readable books it has ever been my pleasure to study. It is excellent for general practitioners and medical students as well as for dermatologists.

The chapter on dermatological diagnosis is well written. The author has added many new methods, such as biopsy, fixation, and staining, with specific directions and details for their use. The chapter on etiology of dermatitis is short and good. Therapy, internal medication, and formulas are discussed, along with special directions for their preparation. The illustrations, if studied thoroughly, would make an excellent postgraduate course in dermatological conditions.

The treatment of syphilis has been brought up to date with penicillin therapy. The handling of syphilis, beginning with the diagnosis and the description of the skin manifestations, is interesting, especially the differentiation in the systemic development in late syphilis and the lesions in primary syphilis.

The chapter on dermatitis venenata from weeds is well presented, and also the chapter on tropical skin diseases, which has been brought up to date by the addition of conditions found in returned soldiers.

[4]**Gynecology, With a Section on Female Urology.** By Lawrence R. Wharton, Ph. B., M. D., Assistant Professor of Gynecology, The Johns Hopkins Medical School. Cloth, 1,027 pages. Second edition, with 479 illustrations. Price, $10.00. Philadelphia, W. B. Saunders Company, 1947.

Wharton's first edition, published in 1943, was one of the most readable books in this specialty. Because of the simplicity of presentation it made an ideal text for medical students, as well as the general practitioner and the gynecological specialist.

The second edition, with its more fully indexed table of contents, its added illustrations, its up-to-date subject matter with new additions of urological text, has made the book an outstanding contribution to the teaching literature.

Although the author presents the pros and cons of medical therapeutics, especially involving endocrine treatment, he is conservative in his attitude about the value of hormone therapy for some female dysfunctions. His discussions on carcinoma of the cervix and endometrium, on endometriosis, and sterility, impress the reader with the fact that he is conveying knowledge gained only after long experience in the clinical and surgical wards.

Because the field of gynecology is so extensive, it is virtually impossible to include the whole subject matter in one volume. For this reason the specialist will find this book lacking in sufficient detail, especially on differential surgical procedures. The surgical matter presented is well chosen, but it is not of sufficient amplitude to be used as a reference text. The best audience for this book is the general practitioner and the medical student. The gynecologist also will find it refreshing reading, well presented, conservative in its scope, and authoritative.

[5]**A Textbook of Medicine.** Edited by Russell L. Cecil, A. B., M. D., Sc. D., Professor of Clinical Medicine, Cornell University Medical College. Cloth, 1,730 pages. Seventh edition. Illustrated. Price, $10.00. Philadelphia, W. B. Saunders Company, 1947.

The new edition of Cecil's "Textbook of Medicine" continues to be a thorough treatise on internal medicine. The older topics have been adequately revised, and the newer subjects have been presented in a practical light, avoiding conflicting theories. The text is well arranged both as to grouping of the diseases and the individual arrangement and discussion of each topic according to definition, etiology, pathology, symptoms, diagnosis, prognosis, and treatment. The illustrations are fairly numerous and good, the new color plates being a valuable addition.

Dr. Cecil's new text should continue to enjoy high favor with medical student, general practitioner, and internist alike.

[6]**Cineplasty.** By Henry H. Kessler, M. D., Ph. D., Formerly Captain (MC) USNR; Formerly Chief of Amputation Center, United States Naval Hospital, Mare Island, Calif. With a Foreword by Ross T. McIntyre, Vice-Admiral (MC) USN, The Surgeon General, United States Navy. Fabricoid, 201 pages. Price, $6.75. Springfield, Illinois, Charles C. Thomas, Publisher, 1947.

The author, with lucid prose and an obviously profound knowledge of his subject, has been able to concentrate within 103 pages all the pertinent knowledge concerning the amputee and the problem of prosthesis as it has been solved to date.

Following a short but comprehensive description of various types of prosthesis for the upper extremity and the history of cineplasty, the various techniques used in the actual operation are discussed. This discussion of operative technique, together with the physiology and anatomy of the involved part, is likely more easily understood than any other preceding attempt to explain such procedures.

Numerous plastic procedures used in partial loss of hands are discussed. A concise review of the Krukenberg operation for the utilization of the ulna and radius in grasping is given, and the book ends with a chapter on the rehabilitation of amputees.

This book is a digest, so concentrated with useful knowledge that it should be read by all professional men who are called upon to serve amputees.

[7]**Rh. Its Relation to Congenital Hemolytic Disease and to Intragroup Transfusion Reactions.** By Edith L. Potter, M. D., Ph. D., Assistant Pro-

[3]Reviewed by Paul H. Power, M. D., Waco.
[4]Reviewed by Theodore R. Hannon, M. D., Houston.
[5]Reviewed by William H. Teague, M. D., Fort Worth.
[6]Reviewed by A. D. Roberts, M. D., Fort Worth.
[7]Reviewed by Sol Haberman, Ph. D., William Buchanan Blood Center, Baylor Hospital, Dallas.

fessor of Pathology, Department of Obstetrics and Gynecology, The University of Chicago and the Chicago Lying-In Hospital. Cloth, 344 pages. Price, $5.50. Chicago, The Year Book Publishers, Inc., 1947.

It is remarkable that the recently discovered Rh factor has made so great an impression on the usually conservative field of medicine. The impetus of its clinical significance in obstetrics, pediatrics, and transfusions precipitated a concentrated series of studies by many laboratory and clinical investigators. From 1939 to 1947 a wealth of reports have appeared. In this book, the author reviews and mentions 822 articles and references to this and related subjects. This exhaustive review of the literature is in itself of value to persons interested in immunohematology.

The book is divided into six chapters. The first two chapters review the discovery and scope of the Rh factor. Considerable attention is paid to the methods used and observations made which led to the discovery of the Rh-Hr antigens. Chapter 3 contains a discussion of the Rh antigens and antibodies. In Chapter 4, the relation of the Rh to transfusion reactions is summarized. Chapter 5 is an extensive survey and treatise on hemolytic disease (erythroblastosis) from the viewpoints of classification of the forms of the disease, diagnosis, complications, and sequelae, and the pathology involved. Chapter 6 deals with the techniques for Rh typing and the detection of the presence of antibodies.

The extent of the treatment of these subjects varies from the comprehensive review of hemolytic disease (erythroblastosis) to the brief handling of other phases of the Rh problem. It is with regret that I found the importance of Rh in transfusions presented in only twelve pages. In this discussion, the author condemns the use of the modified Oehlicher "biological test" for determining the tolerance of a patient to a blood to be used in transfusion when the Rh factors are concerned, but recommends its use when the Hr factors are in question. This recommendation is not only inconsistent but dangerous. In view of the availability of the Rh-Hr sera for testing and the recognized insensitivity of the "biological test," I consider this a dangerous procedure. Also, the emphasis on the use of sodium lactate to alkalinize the urine before the administration of blood of doubtful compatibility can lead only to false security.

The discussion on hemolytic disease is not only extensive but lucid. The illustrations and photomicrographs are well chosen and characteristic of the pathology observed in erythroblastosis. The author presents an excellent discussion of the pathology and management of erythroblastosis.

This book is of great value to both the clinician and laboratory worker interested in the Rh factor, in spite of the meager treatment of the subjects of types of Rh antiodies and the Rh-Hr factors in transfusions.

NEWS

Contributions to this department will be appreciated. News should be of general medical interest, such as public health activities, new hospitals, personal items of more than local value, etc. News for a particular number of the JOURNAL should be in the hands of the Editor not later than the fifteenth of the preceding month.

Scott and White Hospital-Clinic, Temple, celebrated its fiftieth anniversary October 3-4 when the Association of Fellows of Scott and White Clinic held its first meeting since before the war, reports the Temple *Telegram*. More than eighty physicians who interned at the hospital or who have been on its staff were present for the activities, which included a scientific program featuring Dr. James T. Priestly and Dr. Charles H. Watkins, both of the Mayo Clinic, Rochester, Minn., a picnic at the Salado cabin of Dr. A. C. Scott, Jr., a reception and dance, and other entertainment. The late Dr. A. C. Scott, Sr., and the late Dr. R. R. White first became partners in 1897. A few years later they began building up the hospital plant which bears their names and in which their sons, Dr. A. C. Scott, Jr., and Dr. Raleigh R. White, Jr., are still associated. The Association of Fellows of Scott and White Clinic was organized in 1935, and meetings were held annually through 1939, when they were suspended for the duration of the war.

A Physical Therapy School has been established at Hermann Hospital, Houston, to help ease the urgent need for registered physical therapists in the Houston area, according to the Houston *Chronicle*. The school is being affiliated with Baylor University College of Medicine, and instructors will be drawn from the Baylor faculty as well as from the hospital staff. At the end of the year-long course students will be ready to take the national registry examination for physical therapists.

Southwestern Medical College.—Proceedings for condemnation of land on the Southwestern Medical College campus for the erection of a 500-bed Veterans Administration Hospital have gotten under way, the Dallas *News* informs.

Allen F. Reid, Ph. D., former director of Columbia University chemical and radioactivity research for the Manhattan Project in New York City, has joined the faculty of Southwestern Medical College as associate professor and chairman of the Department of Biophysicis. He will also serve as biophysicist at Baylor University Hospital. Dr. Reid will institute a biophysical cancer research program at the college under the joint sponsorship of the American Cancer Society.

Dr. Guy F. Witt, professor of neuropsychiatry and chairman of the department, has been elected president of the Southern Psychiatric Association, the Dallas *Times-Herald* reports.

The Texas Children's Foundation, a nonprofit, state-chartered group which completed its organization in September, presented its plans October 14 at a dinner for Texas pediatricians in Houston for a three-day conference. Hosts for the dinner were the Texas Medical Center and the foundation. Dr. David Greer, president of the foundation, was toastmaster, and Dr. John K. Glen, a member of the board of trustees, explained plans for a children's center, including a hospital, a research unit in children's diseases, a postgraduate pediatrics school, a special hospital for contagious diseases, and another for surgical patients. The initial 200-bed hospital and other allied units will be built in the Texas Medical Center in Houston. Dr. E. W. Bertner, Houston, president of the center, told visiting pediatricians of the over-all plans for the center. Dr. Arild E. Hansen, Galveston, outlined the needs for improvement of child health in the state and paid tribute to the efforts being made in this line by the foundation and the Texas Medical Center.

Charter members of the board of trustees of the Texas Children's Foundation besides Dr. Greer and Dr. Glen are Dr. Raymond Cohen, vice-president; Leopold L. Meyer, treasurer; George A. Butler, secretary; Miss Nina J. Cullinan, Mrs. Malcolm Lovett, Dr. H. J. Ehlers, Dr. A. Lane Mitchell, and Dr. George W. Salmon, all of Houston, according to the Houston *Post*.

Baylor University College of Medicine has moved into its new $3,500,000 building in the Texas Medical Center, Houston, according to the Houston

Chronicle. The school has been operating in temporary quarters since its removal from Dallas in 1943. The building was still not entirely finished when the autumn term began early in October, but it will be the first unit to be completed in the Texas Medical Center.

Dr. Warren T. Brown, professor of psychiatry and chairman of the Department of Neuropsychiatry at Baylor University College of Medicine, has been named associate dean, reports the Houston *Chronicle.* A native Texans and graduate of the University of Texas School of Medicine, Dr. Brown came to the Baylor faculty last July from the faculty of Yale University School of Medicine. In his new position he will assist with the administrative affairs of the school.

The M. D. Anderson Hospital for Cancer Research, Houston, has announced the addition of two staff members: Russell W. Cumley, Ph. D., as medical editor and director of publications, and Dr. Gilbert H. Fletcher, as traveling fellow in radiology. Dr. Cumley, a graduate of the University of Texas, was medical editor at Abbott Research Laboratories, Chicago, before joining the Anderson Hospital staff. Dr. Fletcher is making a study of European institutions devoted primarily to radiological investigation and treatment of cancer. The M. D. Anderson staff is developing a plan whereby students of cancer from all parts of the world may come to the hospital for study and consultation and in return its own personnel may visit outstanding institutions elsewhere.

The University of Texas Medical Branch business office has been moved from the old red stone laboratory building where it was established fifty-seven years ago to a newly decorated army barracks building on the Galveston campus, reports the Galveston *Tribune.*

Visitors on the campus recently have been Dr. Percival Bailey, professor of neurology at the University of Illinois School of Medicine; Dr. Gregg M. Sinclair, president of the University of Hawaii; and Dr. Alexander Lipschutz, director of the Institute of Experimental Medicine of the Health Department of the Republic of Chile.

Dr. C. C. Grulee, Jr., formerly instructor in pediatrics at the University of Minnesota, has been named administrator of the Stewart Convalescent Home and assistant professor of pediatrics.

The Army Air Force Laboratories has granted $12,500 to Howard G. Swann, Ph. D., associate professor of physiology, for research on resuscitation. A. Packchanian, Ph. D., director of the microbiology laboratory, has received a $16,000 grant from the Navy for research in Chagas' and Weil's diseases. Lederle Laboratories, Pearl River, N. Y., has given $2,500 to support studies on rickettsial diseases under the direction of Dr. Ludwik Anigstein.

Dr. C. T. Stone, professor of internal medicine, has been elected third vice-president of the American College of Physicians.

Dr. T. G. Blocker, Jr., professor of plastic and maxillofacial surgery, was a speaker at the meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago recently.

Dr. George R. Herrmann, professor of internal medicine, recently discussed his studies on atherosclerosis before the Beverly Hills Medical Society and West Los Angeles Veterans Facility in California, and reported on research in paroxysmal tachycardia at the American Clinical and Climatological Association meeting in Colorado Springs, Colo., October 15.

Chauncey D. Leake, Ph. D., dean and vice-president, spoke at the annual dinner of the Army Medical Library in Washington, October 10, and at a regional meeting of the National Foundation for Infantile Paralysis in Oklahoma City, October 14. He was elected president of the honorary consultants of the Army library.

Dr. Edgar J. Poth, professor of surgery, presented a paper at the annual meeting of the Association of American Medical Colleges in Sun Valley, Idaho, October 27-29.

Personals

Dr. Joseph M. Hill, Dallas, has been elected the first president of the International Society of Hematology, organization of which was begun following a world blood congress held in November, 1946, in Dallas and in Mexico City, reports the Dallas *News. Sol Haberman, Ph.D.,* Dallas, member of the Baylor Hospital staff, is secretary of the new society.

Dr. C. A. Stevenson, Temple, has been elected president of the alumni of the Mayo Clinic x-ray department, according to the Temple *Telegram.*

Dr. H. L. Hilgartner, Austin, recently appeared on the program of the Academy of Ophthalmology and Otolaryngology, which met in Chicago, the Austin *Statesman* informs.

Dr. J. Knox Webster, Athens, has received a certificate from his alma mater, the University of Louisville medical school, commemorating fifty years of service in medicine, the Athens *Review* states. Dr. Webster was graduated in 1890 and has now retired after fifty-seven years of practice.

Dr. James M. Alexander, Abilene, in September was honored at two dinners on his eightieth birthday. According to the Abilene *Reporter-News,* Dr. Alexander has been in practice in Abilene almost fifty-eight of his 80 years.

Dr. and Mrs. L. R. Talley, Temple, are grandparents of a girl, Martha Kay, born October 7 to Mr. and Mrs. John B. Daniel, reports the Temple *Telegram.*

Births

To *Dr. and Mrs. C. C. Jones, Jr.,* Kerrville, a daughter, Louise Lynn, September 2.

To *Dr. and Mrs. W. W. Sumner,* Fort Worth, a daughter, Elizabeth Scott, September 10.

To *Dr. and Mrs. Louis Levy,* Fort Worth, a son, Max Mehl, September 5.

To *Dr. and Mrs. J. B. Fershtand,* Fort Worth, a son, John Buckley, Jr., September 14.

To *Dr. and Mrs. Ralph Campbell,* Fort Worth, a daughter, Linda Sue, September 25.

To *Dr. and Mrs. R. S. Spencer,* Fort Worth, a son Bruce Robert, October 16.

SOCIETY NEWS

Bee-Live Oak-McMullen Counties Society

September 17, 1947

(Reported by D. W. Davis, Secretary)

Current Affairs of the State Medical Association—W. E. Whigham, McAllen, Councilor of District 6.
Use of Oxygen in Cardiac Diseases (motion picture).

C. D. Gipson, Three Rivers, president of the Bee-Live Oak-McMullen Counties Medical Society, presided over a dinner meeting September 17 in Three Rivers. The program outlined was presented.

Bexar County Society

October 2, 1947

Public Health—Austin E. Hill, San Antonio.

Bexar County Medical Society heard a talk on public health by the new director of the San Antonio Health Department, Austin E. Hill, when it met October 2 in San Antonio.

October 9, 1947

Dysenteries—Col. James E. Ash.

Col. James E. Ash, scientific director of the American Registry of Pathology and recently retired di-

rector of the Army Institute of Pathology, spoke on the dysenteries at the October 9 meeting of the Bexar County Medical Society in San Antonio.

Brazoria County Society

September 25, 1947

(Reported by A. O. McCary, Secretary

Cardiac Emergencies—William Greenwood, West Columbia.

Members of Brazoria County Medical Society, their wives, and the dentists of the county and their wives met for a buffet dinner in Angleton on September 25, at which the physicians of the northern part of the county were hosts. Following the meal, the women retired for a separate meeting.

The society heard the talk named above, and a discussion by H. W. Cummings, Houston, Councilor of District 9. The possibility of transferring Brazoria County from District 9 to District 8 was considered, and upon motion by William Greenwood, West Columbia, seconded by H. J. Hayes, Alvin, the society voted unanimously to remain in District 9. The secretary was instructed so to inform Dr. Cummings.

Cass-Marion Counties Society

September 10, 1947

Linden physicians were hosts at a dinner for the Cass-Marion Counties Medical Society and Auxiliary September 10 in Linden. Following dinner, the auxiliary met at the home of Mrs. C. E. Davis, and the medical society heard a talk by J. W. Burnett, Texarkana. O. R. Taylor, Linden, presided.

Colorado-Fayette Counties Society

September 30, 1947

(Reported by C. I. Shult, Secretary)

Complete Hysterectomies—Kenneth C. Von Pohle, Houston.

Colorado-Fayette Counties Medical Society held a dinner meeting September 30 in Weimar with members of the auxiliary also present for the meal. The program, which was under the direction of W. T. Youens, Weimar, consisted of a paper by Kenneth C. Von Pohle, Houston, who presented reasons for doing total hysterectomies and showed comparisons in mortality and morbidity of cases approached by the vagina and by the abdomen at Hermann Hospital, Houston.

The society decided to draw up a constitution and by-laws. A committee was named to prepare and present the material at the October meeting.

Dallas County Society

September 25, 1947

(Reported by W. W. Fowler, Secretary)

Management of Acute Cholecystitis—Robert M. Zollinger, Professor of Surgery, Ohio State University Medical School.

Dallas County Medical Society met September 25 in Dallas with 103 members and 31 visitors present. Robert M. Zollinger, professor of surgery at Ohio State University Medical School and guest of the Dallas Southern Clinical Society, presented a paper on acute cholecystitis, which he illustrated extensively with charts and drawings.

M. O. Rouse announced that special exhibits to be presented at the Dallas Health Museum during the State Fair were open to the members of the society for a preview.

Lex Burke Smith was elected to membership.

October 9, 1947

(Reported by W. W. Fowler, Secretary)

Puzzling Types of Abdominal Pain—Walter D. Alvarez, Professor of Medicine, University of Minnesota.

Walter D. Alvarez, professor of medicine at the University of Minnesota and guest of the Dallas Southern Clinical Society, spoke at the October 9 meeting of Dallas County Medical Society. There were 148 members and visitors present.

Announcement was made that the first anniversary celebration of the Dallas Health Museum would be held October 16.

El Paso County Society

September 9, 1947

(Reported by W. Compere Basom, Secretary)

Tuberculous, Infectious, and Neoplastic Disease of the Thorax—L. E. Wilcox, Leopoldo Villareal, R. B. Homan, and N. F. Walker, El Paso.

El Paso County Medical Society met September 9 in El Paso with the president, John E. Morrison, presiding. The scientific program outlined above was given.

John Hick Johnstone was accepted for membership upon transfer from the Grant County Medical Society, New Mexico.

Announcement was made that a new speakers' stand for the Turner Memorial Home had been made by F. O. Barrett from fine oak wood furnished by H. H. Varner. The society voted that a letter of thanks be sent to each of the physicians. It was also voted that letters of thanks be sent to H. D. Garrett, Newton F. Walker, Erich Spier, and George Turner for their assistance in putting the society's library in order.

September 23, 1947

El Paso County Medical Society and Auxiliary held a dinner meeting in El Paso the evening of September 23 with B. E. Pickett, Sr., Carrizo Springs, President of the State Medical Association, as the speaker. Dr. Pickett pointed out that in emphasizing scientific advancement only, the medical profession has allowed the cults to enter the field to the detriment of the profession and the public health. Ralph Homan was in charge of arrangements for the meeting.

Jefferson County Society

October 13, 1947

(Reported by E. Mittendorf, Executive Secretary)

Fractures in General Practice—L. C. Powell, Beaumont.
Discussion—Stuart Wier and John A. Hart, Beaumont, and Walter W. Glass, Jr., Port Arthur.

Thirty-eight members of Jefferson County Medical Society were present October 13 in Beaumont to hear the scientific paper named above.

T. H. Brownrigg and Charles R. Goodwin were elected to membership upon application.

A letter of appreciaton from Jep S. Fuller, county attorney, expressing appreciation for the cooperation of the society in eliminating the indiscriminate sale of barbiturate drugs was read.

John A. Hart, Beaumont, chairman of a special committee appointed for the purpose, reported concerning a plan for training courses by the National Foundation for Infantile Paralysis, Jefferson County Chapter, for professional nurses and lay persons. Upon recommendation of the committee the society unanimously approved the plan.

Charles H. Todd, Jr., Beaumont, gave a report from the committee on hospitals with regard to the application of the Beaumont Infirmary for recognition by the Council on Hospitals of the American Medical Association. The secretary was instructed to forward the report to the council.

A letter soliciting funds for the Bessie Lewis Home for Aged Negroes was read. The society voted that the secretary reply, stating that the group could not contribute any of its funds for the purpose since the institution is not countywide in scope.

Pecos-Jeff Davis-Presidio-Brewster Counties Society

October 5, 1947

(Reported by W. E. Lockhart, Secretary)

Varicose Veins (motion picture).
Human Fertility (motion picture).

Pecos-Jeff Davis-Presidio-Brewster Counties Medical Society met for cocktails and dinner at the home

of Dr. and Mrs. John W. Pate, Sanderson, on October 5. Five members and six guests were present to see the motion pictures named above.

C. E. Oswalt, Fort Stockton, called attention to a letter from the Committee on Tuberculosis of the State Medical Association urging each doctor to undertake an extensive program of tuberculosis diagnosis.

Brown-Comanche-Mills-San Saba Counties Society

October 13, 1947

(Reported by P. M. Wheelis, Secretary)

Cardiac Emergencies—O. B. Gober, Temple.
X-Ray Treatment—C. A. Stevenson, Temple.

Thirteen members of Brown-Comanche-Mills-San Saba Counties Medical Society and three guests met in Brownwood on October 13 for a steak dinner, followed by the scientific program outlined. In addition O. N. Mayo, Brownwood, commented further on roentgen treatment.

The society voted to approve a professional directory and H. L. Locker, Ernest Cadenhead, and Homer Allen, all of Brownwood, were appointed to contact the editor of the Brownwood *Bulletin* with regard to a suitable segregation of physicians in the directory.

A letter from M. L. Fuller, director of the Brownwood-Brown County Health Unit, submitted amendments changing the statement of functions of the health unit for approval by the society. The society voted to endorse the amendments. Dr. Fuller was elected to membership upon transfer.

Randall-Deaf Smith-Parmer-Castro-Oldham Counties Society

September 3, 1947

(Reported by Robert P. Jarrett, Secretary)

Newer Concepts in Treatment of Coronary Occlusion—Robert P. Jarrett, Canyon.

Nine members and three guests were present when Randall-Deaf Smith-Parmer-Castro-Oldham Counties Medical Society met September 3 in the office of Robert P. Jarrett and Leo Duflot, Canyon. Dr. Jarrett presented the paper named above, which was followed by general discussion.

Cooperation of physicians in compiling data on medical facilities for the State Medical Association was requested. Refreshments were served after the meeting.

October 1, 1947

(Reported by Robert P. Jarrett, Secretary)

Folic Acid Therapy of Pernicious Anemia—Lewis B. Barnett, Hereford.
Enuresis—Ralph R. Wills, Hereford.

Randall-Deaf Smith-Parmer-Castro-Oldham Counties Medical Society met October 1 in Hereford for a program by two Hereford physicians, as noted above.

The society decided that officers would be responsible for such action as is required for cooperation with the Texas Tuberculosis Association. Announcement was made that the fiscal year for the society will end December 31 and that dues should be paid prior to that date.

Refreshments were served to ten members, a prospective member, and one guest.

Tarrant County Society

October 7, 1947

(Reported by W. P. Higgins, Jr., Secretary)

Dr. H. L. Warwick: Biographical Sketch—Jack Daly, Fort Worth.
Proctological Problems, Especially Hemorrhoid—W. C. Tatum, Fort Worth.
Discussion—Val D. Scroggie, Fort Worth.
Out-Patient Electroshock Therapy—James H. Benton, Fort Worth.
Discussion—Edgar S. Ezell, Fort Worth.

The program outlined was presented when fifty-nine members and six visitors of Tarrant County Medical Society met in Fort Worth on October 7. J. A. Hallmark presided over the program.

May Owen, president, announced that a cancer conference to be known as the Southwest Cancer Conference will be held in Fort Worth on November 20 with outstanding speakers from various sections of the United States participating. She said it is hoped that the conference will be held annually.

At the suggestion of R. G. Baker, Councilor, the society voted to entertain members of the Thirteenth District Medical Society with a dutch lunch November 10 in Mineral Wells, preceding the meeting of the district society in that city on November 11.

Upon application Frederic E. Simpson was elected to membership. W. V. Bradshaw, Jr., was accepted for membership upon transfer from Bexar County Medical Society.

Tom Green-Eight County Society

September 1, 1947

(Reported by H. M. Anderson, Secretary)

Jaundice—Burgess Sealy, Fort Worth.
Discussion—F. L. Hutchins, Carl A. Kunath, and W. E. Schulkey, San Angelo.
Mechanics and Treatment of Congestive Heart Disease—L. K. Norman, Fort Worth.
Discussion—F. L. Hutchins and George L. Nesrsta, San Angelo.

Twenty members and two visitors were present at the September 1 meeting of the Tom Green-Eight County Medical Society in San Angelo. The program outlined above was carried out.

H. N. Ricci was elected to membership upon transfer from Cook County Medical Society, Illinois.

Upon motion by R. J. Axtell, the society voted to pay the secretary of the society's secretary $50 a year for her services, the money to be paid in December.

Carl A. Kunath was requested to investigate the possibility of securing space in the library of the Shannon Hospital to keep the records of the medical society.

K. B. Round moved that the x-ray unit of the State Health Department be invited to come to San Angelo to make films of indigent patients, subject to the restrictions that cases previously diagnosed be accurately accounted for in the report of the unit and that the reports be approved by the society before they are published. After much discussion the motion carried.

Upon motion by J. A. Bunyard the society voted that when regular meetings fall on a holiday, the meeting will be held on the following night.

Travis County Society

September 16, 1947

(Reported by Joe T. Gilbert, Secretary)

Medical Profession vs. Public Opinion—B. E. Pickett, Sr., Carrizo Springs, President of the State Medical Association.

Travis County Medical Society and other members of the Seventh District Medical Society and Auxiliary met in Austin September 16 for a dinner meeting at which B. E. Pickett, Sr., Carrizo Springs, President of the State Medical Association, spoke. Dr. Pickett told the 125 assembled persons that the medical profession needs to overcome its complacency and become alert to the need for a sound, broad public relations program. Oliver Suehs, president of Travis County Medical Society, and R. T. Wilson, district councilor, presided.

Van Zandt County Society

October 6, 1947

Van Zandt County Medical Society met October 6 at the Baker Clinic in Wills Point in conjunction with the first anniversary of the opening of the clinic. H. A. Baker, owner of the hospital-clinic, invited the babies who had been delivered there and their mothers to be present for the meeting at which L. J. Powers, Dallas, pediatrician, spoke. The

program included information on the care of infants and children of special concern to physicians and also material of interest to the mothers.

Fifteenth District Society

September 25, 1947

Invocation—Rev. Kelly Simmons, Gilmer.
Welcome—Mayor Horace Davis, Gilmer.
Nonobstetric Complications of Pregnancy—H. O. Padgett, Marshall.
Care of the Premature Infant—Mildred Stanley, Tyler.
Early Diagnosis of Tumors of the Urinary Tract—R. K. Womack, Shreveport, La.
Anterior Scalenus Syndrome—D. C. Simmons, Kilgore.
Luncheon:
Address—B. E. Pickett, Sr., Carrizo Springs, President, State Medical Association.
Address—Tate Miller, Dallas, President-Elect, State Medical Association.
Report of Councilor—Joe D. Nichols, Atlanta.
Recent Developments in Management of Acute Myocardial Infarction—Grady Reddick, Dallas.
Surgical Emergencies in Newborn—Elbert H. Caldwell, Tyler.
Gynecologic Endocrine Problems—Karl J. Karnaky, Houston.
Hand Injuries—S. A. Collom, Jr., Texarkana.

More than fifty physicians were present for the meeting of the Fifteenth District Medical Society in Gilmer on September 25. The program given above was carried out. Members of the Auxiliary were also present for the luncheon.

During a business session following the luncheon, W. S. Terry, Jefferson, was elected president and James Harris, Marshall, was elected secretary. Daingerfield was selected for the next annual meeting in the autumn of 1948.

AUXILIARY NOTES

Officers of the Woman's Auxiliary to the State Medical Association of Texas: President, Mrs. Edward C. Ferguson, Beaumont; President-Elect, Mrs. S. M. Hill, Dallas; First Vice-President, Mrs. A. N. Boyd, Houston; Second Vice-President, Mrs. H. P. Ledford, Wichita Falls; Third Vice-President, Mrs. A. L. Delaney, Liberty; Fourth Vice-President, Mrs. W. Frank Armstrong, Fort Worth; Recording Secretary, Mrs. M. A. Ramsdell, San Antonio; Corresponding Secretary, Mrs. W. G. Wallace, Beaumont; Publicity Secretary, Mrs. J. F. Campbell, Fort Worth; Treasurer, Mrs. J. Guy Jones, Dallas; Parliamentarian, Mrs. Paul Brindley, Galveston.

AUXILIARY NEWS

Angelina County Auxiliary held its first meeting of the year September 30. Sixteen members met for breakfast in Lufkin with the president, Mrs. J. H. Wade, Lufkin, presiding. Mrs. Ella Glass explained her work with exceptional children and requested members of the group to refer to her any children needing her assistance. Mrs. T. A. Taylor reported on the national auxiliary meeting in Atlantic City.—Mrs. T. A. Taylor.

Bell County Auxiliary recently held a luncheon in Temple honoring the president, Mrs. Travis Smith. Projects of the year were outlined and reports given. Emphasis will be placed on the sale of *Hygeia* with Mrs. Charles Phillips in charge. The health and public relations committee, under the direction of Mesdames J. G. Rodarte and Mrs. G. V. Brindley, Sr., reported the showing of health films to school children and plans of the committee to recruit student nurses in the county. Mrs. F. P. Burrow, Killeen, read a report on socialized medicine from congressional findings. Mrs. A. E. Moon read an original poem in tribute to the late Mrs. J. E. Robinson. The social committee was in charge of the luncheon, and flowers were donated by Mesdames Nathan Roberson, Arthur B. Clements, and Cone J. Heatherly.—Mrs. E. O. Bradfield.

Mrs. J. E. Robinson, Temple, died in October, 1947, following an illness of several months. She is survived by her husband, Dr. J. E. Robinson, Sr.; one son, Dr. J. E. Robinson, Jr., Baltimore, Md.; three sisters and one brother.

Bowie-Miller Counties Auxiliary met in September at the home of Mrs. J. T. Robison, Texarkana. with Mesdames William Hibbitts and Roy Baskett as cohostesses. The Rev. Chauncey Farrell, pastor of the First Presbyterian Church, was the guest speaker. Mrs. Walter Kitchens, incoming president, presided. Mrs. N. B. Daniel, outgoing president, distributed yearbooks. Mrs. Allen Collom urged members to pay their poll taxes and to vote. Refreshments were served from a table decorated with autumn flowers and fruit.—Mrs. Ralph Cross.

Cass-Marion Counties Auxiliary met September 10 at the home of Mrs. C. E. Davis, Linden, following a dinner at the Hotel George at which members of the Linden Medical Society were hosts. Mrs. Ray Carter, a member of Harrison County Auxiliary, spoke on the organization and activities of medical auxiliaries. Mrs. James Brooks was elected vice-president.

Dallas County Auxiliary began its activities for the year with a coffee October 1 at the home of Mrs. H. Leslie Moore, Dallas. Honorees were the new officers. Mrs. Cecil O. Patterson and Mrs. J. Forrest Buchanan, past presidents, poured.

The auxiliary on October 21 sponsored a lecture by Chauncey D. Leake, Ph.D., Galveston, vice-president and dean of the University of Texas Medical Branch, for Southwestern Medical College.—Mrs. W. P. Devereux, Publicity Chairman.

El Paso County Auxiliary had a buffet luncheon at the Turner Memorial Home, El Paso, on October 13, with Mesdames Joe Carter and Andrew Eck as hostesses, assisted by Mesdames Chester Awe, W. Compere Basom, H. J. Bell, J. Travis Bennett, Victor Blanco, Clement Boehler, Louis W. Breck, W. W. Britton, C. P. Brown, A. H. Butler, David Cameron, R. J. Cardwell, Gray Carpenter, J. W. Cathcart, E. Grady Causey, and W. A. Collins, Jr. Committee chairmen for the year were announced.

Galveston County Auxiliary honored charter members and past presidents at a luncheon meeting October 14, attended by 103 members. Mrs. C. Hughes Gilliam, president, presented Mrs. H. Reid Robinson, charter member and past president, and the following past presidents: Mesdames Paul Brindley, John McGivney, John L. Otto, Charles F. Mares, William B. Potter, Frederick Fowler, Jesse B. Johnson, Willard R. Cooke, George T. Lee, G. W. N. Eggers, Robert M. Moore, Edward Thompson and S. R. Snodgrass.

Mrs. John McGivney, health and publications chairman, reported gratifying results from the *Hygeia* campaign of the past summer, and gave her plans to aid in nurse recruitment. A schedule to show health films to school children and to parent-teacher associations was presented. Mrs. William B. Potter, study and legislative chairman, reviewed the address given at the State Executive Board meeting September 12 by Dr. George A. Schenewerk, Dallas, chairman of the Public Relations Committee of the State Medical Association. Mrs. Arild Hansen reported on the local tuberculosis control problem. Yearbooks were distributed.

"The Left Hand Is the Dreamer" by Nancy Wilson Ross was reviewed by Mrs. E. L. Porter.

Autumn foliage and chrysanthemums decorated the tables. Identification tags of green paper in the shape of leaves were made by Mrs. John J. Hopper. Mrs. Carroll T. Adriance and Mrs. B. M. Breath were in charge of arrangements.—Mrs. C. Hughes Gilliam, President.

Grayson County Auxiliary met for tea October 10 at the home of Mrs. W. Doak Blassingame, Sherman, president. Mrs. Blassingame anounced the chairmen of standing committees who will serve this year, the ninth for the organization.

Harris County Auxiliary opened its activities for the year with a tea September 26 at the home of

Mrs. James Greenwood, Jr., Houston, at which members of the Woman's Auxiliary to the Houston District Dental Society were guests. In the receiving line were Mrs. L. L. D. Tuttle, president of the Medical Auxiliary; Mrs. E. B. Arnold, president of the Dental Auxiliary; Mrs. Carlos Hamilton and Mrs. W. L. Stovall, presidents-elect of the groups; Mrs. Fred Y. Durrance and Mrs. David A. Hagerman, immediate past presidents of the two auxiliaries; and Mrs. Greenwood.

Hostesses were executive officers for the year: Mesdames L. L. D. Tuttle, Harry Burr, Norborne Powell, Morris Kilgore, J. H. Barrett, C. F. Jorns, C. Gary Turner, Wood H. Bruder, and James Greene. Mesdames M. L. Graves, Henry C. Haden, Joe B. Foster, and Fred Y. Durrance, past presidents of the Medical Auxiliary, and Mesdames W. E. Sutton, O. E. Ranfranz, Percy A. Wynn, and David A. Hagerman, past presidents of the Dental Auxiliary, assisted at the tea table.

Hunt-Rockwall-Rains Counties Auxiliary met October 7 in the home of Mesdames C. T. Kennedy, Sr., and C. T. Kennedy, Jr., Greenville, with Mesdames E. Truett Crim, H. M. Bradford, and W. E. Pennington as cohostesses.

Officers for the year were installed by Mrs. W. P. Philips, outgoing president. Mrs. H. W. Maier, the new president, took as the theme for her administration, "looking forward," and stressed the need to look to the future with a well rounded program and worth-while projects.

Mrs. Frank J. Little was in charge of the devotional. Mrs. M. L. Wilbanks, program chairman, presented the yearbooks to members who were present. Mrs. Frank J. Little was named press secretary.

Kerr-Kendall-Gillespie-Bandera Counties Auxiliary held its first meeting of the year October 13 at the home of Mrs. S. E. Thompson, Kerrville. The seated tea honored the State President, Mrs. E. C. Ferguson, Beaumont, and the county auxiliary president, Mrs. L. L. Keyser, Fredericksburg. In addition, Mesdames T. H. Sharp, C. C. Alexander, H. A. Haggard, and Scott Applewhite, four past state presidents from San Antonio, wives of the dentists of Kerrville and Fredericksburg, officers of the senior and elementary school parent-teacher associations of Kerrville, and the wives of physicians at Legion were guests.

Mrs. Ferguson told of the aims and purposes of the medical auxiliary and made suggestions for carrying on the work of the coming year. Following her talk, refreshments were served from a beautifully appointed table presided over by the four past state presidents, assisted by members of the local auxiliary.—Mrs. D. E. Packard, Secretary.

Potter County Auxiliary met for lunch and a business meeting October 6 in Amarillo with twenty members present.—Mrs. W. R. Klingensmith.

Mrs. Osie Hickman Roach, wife of Dr. Dee Roach, Amarillo, died September 20, 1947.

Tarrant County Auxiliary arranged a party for its members and the Medical Society for October 4 in Fort Worth. One hundred twenty were present for a barbecue supper followed by dancing and square dancing. Plans were made by the entertainment committee, composed of Mesdames Hub Isaacks, chairman; Charles Ray Lees, Frank Halpin, Jerrell Bennett, A. D. Ladd, H. C. Thomas, and W. M. Wood, Jr.—Mrs. Theron H. Funk, Publicity Secretary.

Tom Green-Eight County Auxiliary met in September at the home of Mrs. Cecil M. French, San Angelo, with Mrs. W. Grady Mitchell as cohostess. Mrs. Mitchell, president, conducted the business session, at which Mrs. Lloyd Hirshberger was named chairman of the project committee to replace Mrs. Ben L. Boynton, who has moved to Dallas. Yearbooks were distributed. Refreshments were served to fourteen.—Mrs. M. D. Knight, Publicity Chairman.

Travis County Auxiliary held its October meeting in honor of Mrs. E. C. Ferguson, Beaumont, President of the State Auxiliary. A luncheon and fashion show in Austin was also attended by Mrs. A. N. Boyd, Houston, first vice-president of the State Auxiliary; Mesdames H. J. Hoerster and R. R. Sheppard, Llano; T. D. Vaughan, Bertram; W. M. Brook, H. B. Rollins, and David Rush McMillan, Lampasas.

The hostess committee included Mrs. Terrance Watt, chairman; Mesdames C. M. Darnall, co-chairman, and Mesdames Will Watt, Dalton Richardson, J. T. Robison, Charles Bailey, W. P. Morgan, A. A. Terry, Hugo Auler, J. R. Nichols, M. I. Brown, and Sam Key, Sr.—Mrs. John A. Crockett, Publicity Chairman.

Washington County Auxiliary met for luncheon in Brenham on September 29 with Mrs. Roger E. Knolle president, presiding. The auxiliary voted to send $10 to the Student Loan Fund, and Mrs. George Zeiss, Hygeia chairman, was instructed to place the publication in the public library for one year. Mrs. S. E. Stafford, project chairman, announced that the project for the year will be to place information on cancer before the public by radio and pamphlets. Mrs. Sam Toubin, program chairman, said the programs for the year will be on cancer and cancer control. She gave a talk on cancer education.

The auxiliary observed "Doctor's Day" on October 27 with a barbecue at the ranch of Dr. Waldo Knolle near Brenham.

Northeast Texas District Auxiliary met September 25 in Gilmer. The morning session, presided over by Mrs. F. S. Littlejohn, Marshall, outgoing president, was held at the home of Mrs. Madison Ragland. New officers elected include Mesdames Joe D. Nichols, Atlanta, council woman and president; Joe Roberts, Longview, vice-president; and E. W. Grumbles Atlanta, secretary-treasurer. A message from Mrs. E. C. Ferguson, Beaumont, State Auxiliary President, was read. Soft drinks were served. At luncheon, members of the auxiliary met with the District Medical Society to hear talks by Dr. B. E. Pickett, Sr., Carrizo Springs, President of the State Medical Association, and Dr. Tate Miller, President-Elect. A tea entertained auxiliary members in the afternoon.—Mrs. Ralph Cross.

DEATHS*

Dr. James Madison Martin, Dallas, Texas, died September 26, 1947, after an extended illness.

Dr. Martin was born December 11, 1867, in St. James, Mo. He attended the Valparaiso Normal and Business Institute, Valparaiso, Mo., and the Vichy Normal and Business Institute of Vichy Springs, Mo. His medical education was secured from the College of Physicians and Surgeons, St. Louis, from which he was graduated in 1892. Soon after his graduation Dr. Martin began practice near Hillsboro, Texas. In 1904 he took additional training in radiology and moved to Dallas, where he had been located since. In 1906 he became the first professor of roentgenology at Baylor University College of Medicine, and at the time of his death he was emeritus professor of radiology at Southwestern Medical College. He had been associated for many years with his son, Dr.

*An obituary ordinarily will not be published more than four months after date of death. Cooperation in reporting deaths of physicians and in furnishing appropriate biographical material promptly is solicited.

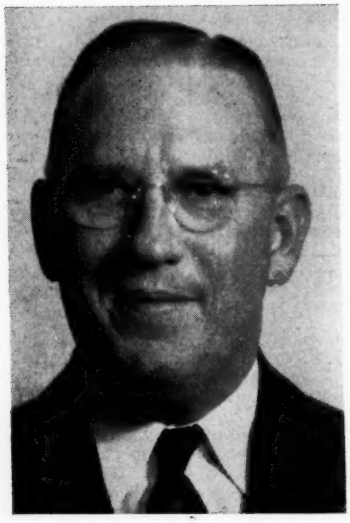
Charles L. Martin, in the practice of radiology and was widely known for his technique of treating skin cancer.

Throughout his professional career Dr. Martin was a member of the State Medical Association and American Medical Association, first through Hill County Medical Society and then through Dallas County Medical Society. He served each county society as president and the state association as secretary of the Section on Dermatology in 1906 and as chairman of the Section on Radiology and Physiotherapy in 1928. He was elected to honorary membership in the State Medical Association in 1946. Dr. Martin was for many years a member of the Physicians Club of Dallas, was a past president of the Dallas Southern Clinical Society and the Dallas Radiological Society, was a member of the American College of Radiology and the Radiological Society of North America. He was a diplomate of the American Board of Radiology. He was for a time the Texas representative of the American Cancer Society and chairman of the Committee on Cancer of the State Medical Association. He was author of a handbook on x-ray methods entitled "Practical Electro-Therapeutics and X-Ray Methods." He was past president of the Texas Geographical Society, a member of the Rotary Club, Bonehead Club, and Dallas Athletic Club, and a thirty-second degree Scottish Rite Mason and Shriner. His hobbies were metalcraft, woodcraft, and photography.

In 1893 Dr. Martin married Miss Emma Auerbach, who preceded him in death several years ago. He is survived by his son, Dr. Charles L. Martin, Irving, and a grandson, Dr. James A. Martin.

Dr. James Robert Martin, Houston, Texas, dermatologist, died of coronary occlusion September 2, 1947.

Dr. Martin was born December 9, 1907, in Beaumont, the son of Dr. Felix S. and Ophelia Martin. He attended Staunton Military Academy, Staunton, Va.; Kemper Military Institute, Booneville, Mo.; New Mexico Military Institute, Roswell, N. Mex.; Lamar College, Beaumont; and the University of Texas, Austin. He was graduated from Baylor University College of Medicine, Dallas, in 1933. He served an internship at Hotel Dieu, Beaumont, and residencies at Grassland Hospital and the Skin and Cancer Hospital, New York, at the latter of which he specialized in dermatology. He was in practice in Houston from 1937 until January, 1941, when he went on duty with the Naval Reserve. He was the first medical officer for the Naval Air Station at Dallas and spent twenty-seven months overseas as a flight surgeon with the Marines in the Pacific Theater. Upon his discharge from the service, Dr. Martin returned to Houston in February, 1946, and resumed his practice.



DR. JAMES ROBERT MARTIN

During his professional career Dr. Martin was a member of the State Medical Association and American Medical Association, for several years through Jefferson County Medical Society and then through Harris County Medical Society. He was a member of Phi Chi fraternity, a thirty-second degree Mason, a member of the Shrine, Knights Templar, and Rotary Club.

Dr. Martin is survived by his wife, the former Miss Nan Barnhill, whom he married May 30, 1932, in Durant, Okla.; his mother, Mrs. Ophelia Martin, Beaumont; and one brother, George Beatty, Bombay, India.

Dr. Charles Davis Williamson died October 4, 1947, at his home in Three Rivers, Texas, of cancer.

Born February 1, 1869, at Rutledge, Ala., Dr. Williamson was the son of E. T. and Arye (Davis) Williamson. He moved to Texas as a boy and attended Weatherford College before obtaining his medical degree from the old College of Physicians and Surgeons, Dallas, in 1906. Dr. Williamson had begun the practice of medicine about 1897 after studying under preceptors. He practiced in Sacul, Nacogdoches County, and in Henderson, Angelina, Eastland, and Andrews Counties for several years. From 1913 until 1918 he was located at Oakville, and from 1918 until his death in Three Rivers. He had retired from active service in 1946.

DR. CHARLES D. WILLIAMSON

During most of his professional life, Dr. Williamson was a member of the State Medical Association and American Medical Association, first through Nacogdoches County Medical Society, then through Live Oak County Medical Society, and after its organization of the Bee-Live Oak-McMullen Counties Medical Society. He was president of the latter society in 1936, and was elected to honorary membership in the State Medical Association in 1947. He was a member of the Fifth and Sixth Districts Medical Society and the Southern Medical Association. He was a member of the local Methodist Church and was chairman of its board of stewards for more than thirty years. He was a thirty-second degree Mason, past master of Evergreen Lodge 325, and district deputy grand master of the thirty-eighth Masonic District of Texas. He was a Knight Templar. He was a member of the first board of aldermen of Three Rivers and was city health officer for a number of years.

In 1892 Dr. Williamson married Miss Mary Elizabeth Abernathy who died three years later. On December 18, 1898, in Henderson County, he married Miss Georgia E. Moseley, who survives. Also surviving are a daughter, Mrs. Della Goebel, Three Rivers; one sister, Mrs. John Frier, Lovington, N. Mex.; and two brothers, E. T. Williamson, Lytle, and F. H. Williamson, Big Spring.